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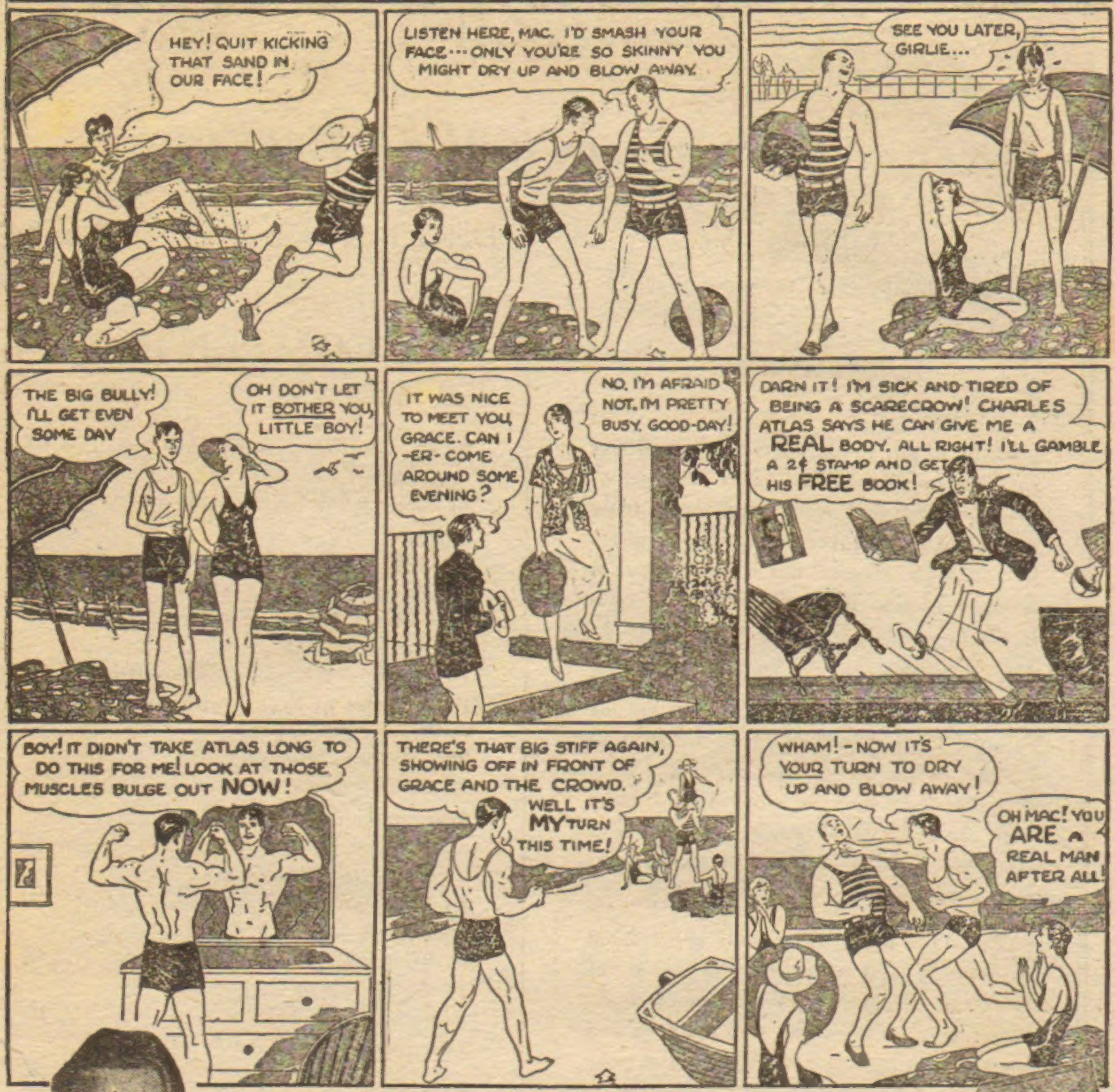
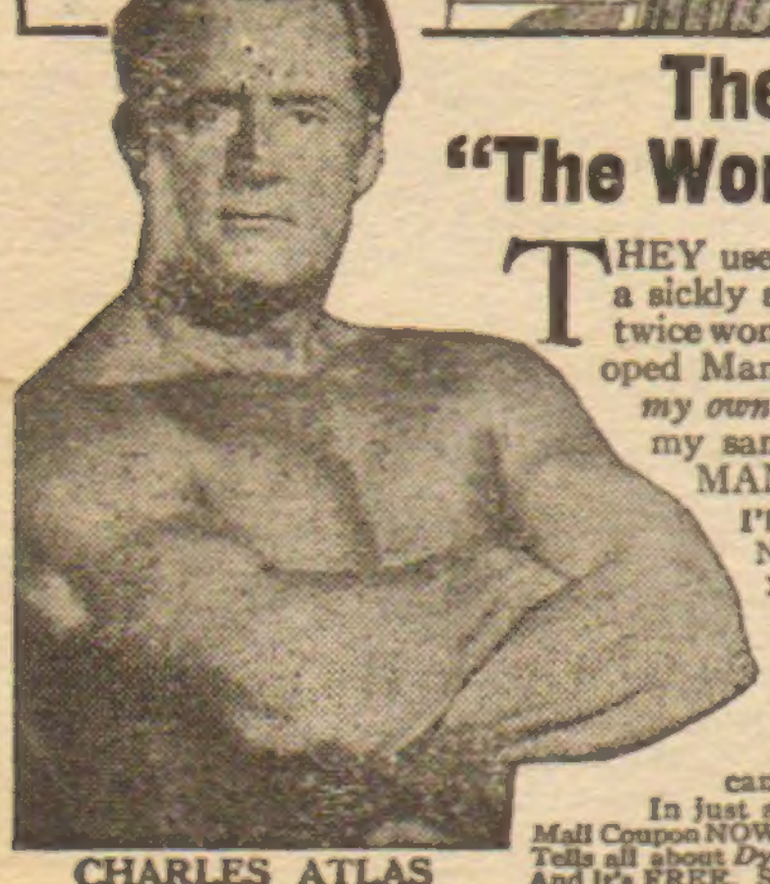
THE INSULT THAT MADE A MAN OUT OF "MAC"


HEY! QUIT KICKING THAT SAND IN OUR FACE!
LISTEN HERE, MAC. I'D SMASH YOUR FACE··· ONLY YOU'RE SO SKINNY YOU MIGHT DRY UP AND BLOW AWAY.
SEE YOU LATER, GIRLIE...
THE BIG BULLY! I'LL GET EVEN SOME DAY
OH DON'T LET IT BOTHER YOU, LITTLE BOY!
IT WAS NICE TO MEET YOU, GRACE. CAN I -ER- COME AROUND SOME EVENING?
NO, I'M AFRAID NOT. I'M PRETTY BUSY. GOOD-DAY!
DARN IT! I'M SICK AND TIRED OF BEING A SCARECROW! CHARLES ATLAS SAYS HE CAN GIVE ME A REAL BODY. ALL RIGHT! I'LL GAMBLE A 2¢ STAMP AND GET HIS FREE BOOK!
BOY! IT DIDN'T TAKE ATLAS LONG TO DO THIS FOR ME! LOOK AT THOSE MUSCLES BULGE OUT NOW!
THERE'S THAT BIG STIFF AGAIN, SHOWING OFF IN FRONT OF GRACE AND THE CROWD. WELL IT'S MY TURN THIS TIME!
WHAM! - NOW IT'S YOUR TURN TO DRY UP AND BLOW AWAY!
OH MAC! YOU ARE A REAL MAN AFTER ALL!

The 97-lb Weakling Who Became "The World's Most Perfectly Developed Man"



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JULES VERNE'S TOMBSTONE AT AMIENS PORTRAYING HIS IMMORTALITY

AMAZING STORIES

Scientific Fiction

Vol. 7 December, 1932 No. 9

Announcement

Many of our readers have indicated that in their opinion the editorial contents of AMAZING STORIES would be more truly portrayed if the cover of the magazine reflected with greater fidelity the type of Science Fiction that appears in the publication.

It is thought that a cover depicting a basic and fundamental interpretation of Science Fiction instead of an illustration limited in its scope to a particular incident of some specific story would meet with the approval of those who now read AMAZING STORIES and would also appeal to the uninitiated.

As we are acting upon your appreciated suggestions and changing the cover of AMAZING STORIES with the next issue (January), we hope you will approve and we are looking forward to receiving your comments.

See page 844 for the stories in our next issue.

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The Cover

Our cover shows the attack by a shark and how it is met by the heroes of the story "The World of the Living Dead." The accuracy of the painting of the shark is an interesting feature of the picture.

Illustrations and Cover by Morey

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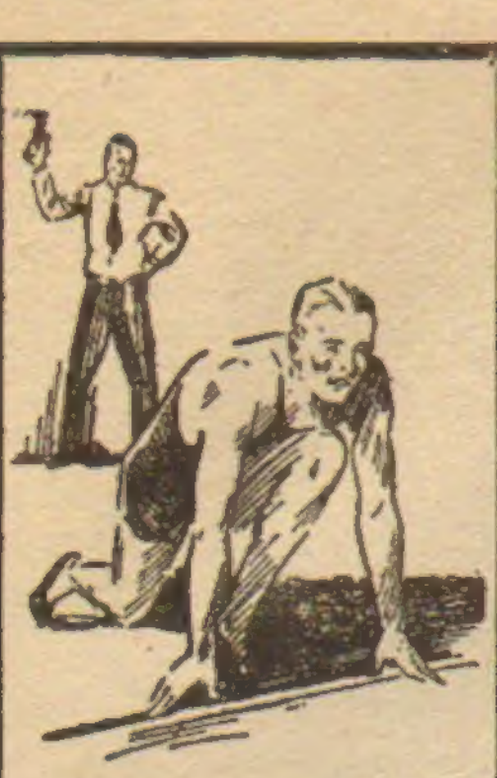

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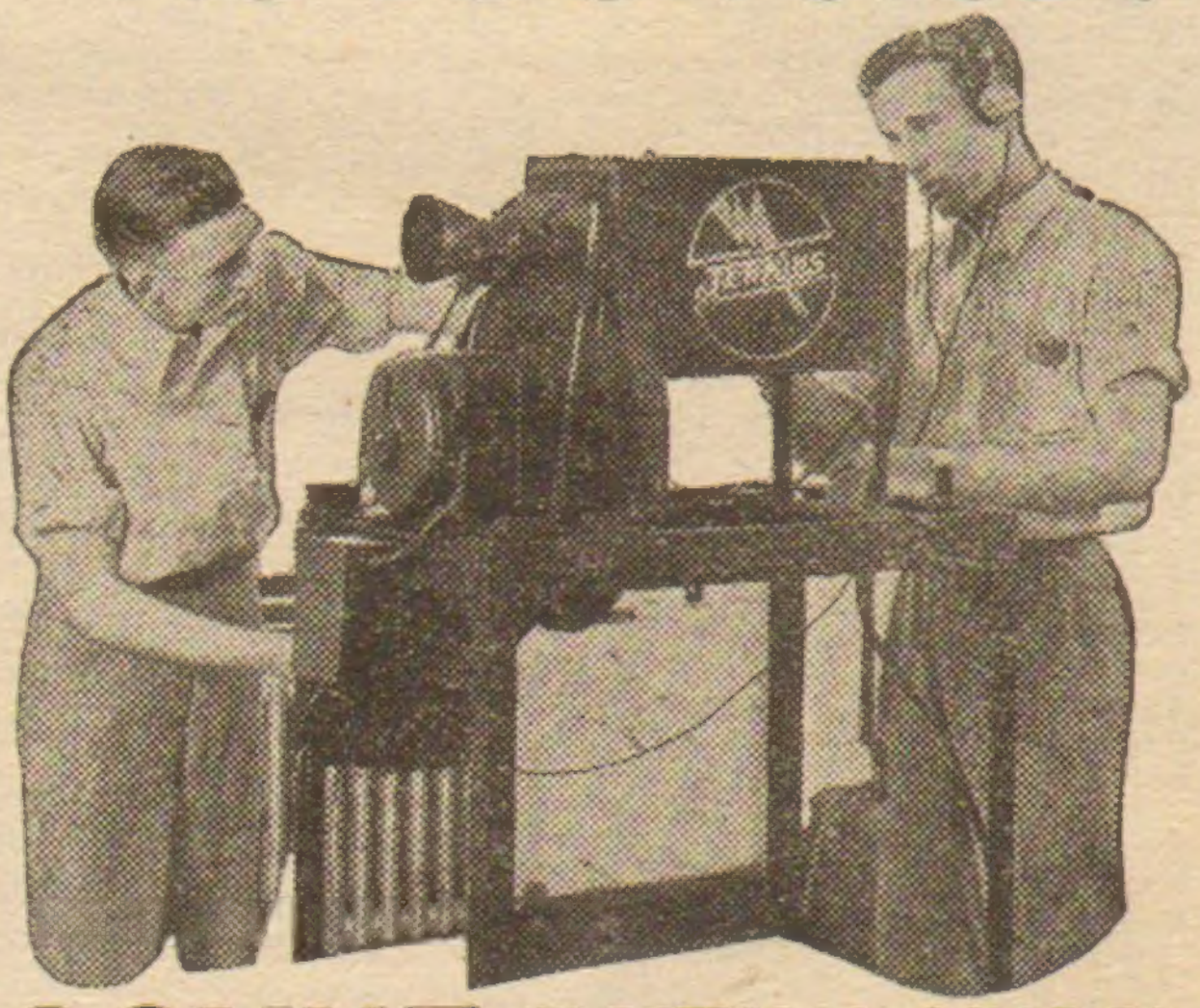

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They laughed right out loud..when I offered to play

—but a moment later a hush fell over the entire crowd

"LET'S all give my country cousin a great big hand!" cried Helen, dragging me out to the center of the room.

Everyone at the party started to clap. "What's he going to do?" someone called out. "Are we going to be entertained with an exhibition of fancy hog-calling?"

"No—cousin Ned claims that he can play the piano," replied Helen, "but I'm sure he's fibbing. I happen to know that there isn't a piano teacher within miles of his home town."

"Just the same I'd like to see if you big-towners can dance as well as you can wise-crack," I retorted, not taking any offense.

"For goodness sakes, please don't play 'Turkey in the Straw' . . . you know this is no barn dance," one of the boys pleaded.

I Let Them Have Their Fun

So they thought I was a "hick"—that folks from the country couldn't learn to play music just as well as people in the city. They thought, too, that they were giving me a great kidding. If they only knew how I had been toying with them right along.

I started to pull out the piano bench and someone started to "moo." "S-h-h-h-h!—let him have his little joke," said my cousin Helen.

But they kept up the razzing. "Hey, there—that's a piano bench, not a milk-stool."

"No fooling—and this is a piano, not a writing desk. Honestly, it plays—listen!" And without any preliminaries, I broke into a medley of popular songs. There wasn't a sound in the room. I only wish I could have seen their faces, for I knew that I had given them quite a surprise.

"Keep it up—that's great, Ned," shouted the chap who had been doing most of the riding.

"Yes, please don't stop," begged Helen. "We want to dance."

No second invitation was needed. I played every number that they placed before me, and if they had had their say I would have been playing until morning. But finally I had to beg for an intermission. Then they started to pump me with questions.

"Put one over on us, didn't you, Ned?" said Helen. "You're certainly the last person at this party I thought could play. How about being a good sport and letting us in on the secret?"

No Secret

"Have you ever heard of the U. S. School of Music?" I asked.

A few of my friends nodded. "That's a correspondence school, isn't it?" they exclaimed.

"Exactly," I replied. "They have a surprisingly easy method through which you can learn to play any instrument by mail in just a few months without a teacher."

"It doesn't seem possible," someone said.

"That's what I thought, too. But the Free Demonstration lesson which they mailed me on request so opened my eyes that I sent for the complete course.

"It was simply wonderful—no laborious scales—no heartless exercises. My fear of notes disappeared at the very beginning. As the lessons came they got easier and easier. Before I knew it I was playing all the pieces I liked best."

Then I told them how I had always longed to sit down at the piano and play some old sweet song—or perhaps a beautiful classic, a bit from an opera or the latest syncopation—how when I heard others playing I envied them so that it almost spoiled the pleasure of the music for me—how I was jealous because they could entertain their friends and family.

"Music was always one of those never-to-come-true dreams until the U. S. School came to my rescue. Believe me, no more heavy looking-on for me, even if I do come from the country."

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VOLUME 7

AMAZING STORIES

THE MAGAZINE OF SCIENCE FICTION

DECEMBER, 1932 No. 9

T. O'CONOR SLOANE, Ph.D., *Editor*

Editorial and General Offices: 222 West 39th Street, New York, N. Y.

Extravagant Fiction Today . . . . . *Cold Fact Tomorrow*

Eclipses of the Sun

By T. O'Conor Sloane, Ph.D.

THE moon in her path around the earth is subject to many changes which make lunar calculations very laborious. It has even been said that to make a complete determination would take years of a calculator's time.

If we hold an object in front of our eye, it might be a pencil or our finger, we can make it hide a distant object completely or partly, or even overlap it by varying its distance from the pupil of the eye. Sometimes the question is asked how large does the moon look to you, or the sun, both of them being approximately of the same apparent size. Some people might say as big as a ten-cent piece, others might say as big as a half dollar, others as big as an orange, because any disc would mask the sun if held at the proper distance from the eye. In our somewhat complicated movement around the earth the moon's distance varies considerably, and, owing to the elliptical orbit of the earth, the sun's distance from us also varies. Now, when the combination of the movements of the earth in its revolution on its axis and in its following its path around the sun, are joined to the movements of the moon, it is clear that all sorts of relations may be established between their relative positions. If in the course of these movements the moon comes between the earth and the sun, we will have a very good demonstration of the fact that owing to their relative distances from the earth's surface, they are of approximately the same apparent size as far as diameter or area goes. In reality the sun is well over 400 times the diameter of the moon. Its great distance diminishes its apparent size to approximately that of the little moon, for our moon is really very small, a little over one quarter the diameter of the earth.

When a total eclipse occurs, one of the data obtained by observation and which always has been calculated beforehand, is the duration of totality. It is a subject of interest to all of us. In the case of the recent total eclipse of the sun, the astronomers' calculations were about one second wrong.

Now suppose that an eclipse occurred when the relative distances of sun, moon and earth were such that the moon's apparent diameter was exactly the apparent diameter of the sun, it would give a total eclipse of only instantaneous duration because sun, moon and earth are in perpetual movement and the moon is only able at the most to mask the sun for the briefest possible period. This is because it is virtually moving across the face of our luminary, so it is conceivable that we might have a total eclipse of instantaneous duration.

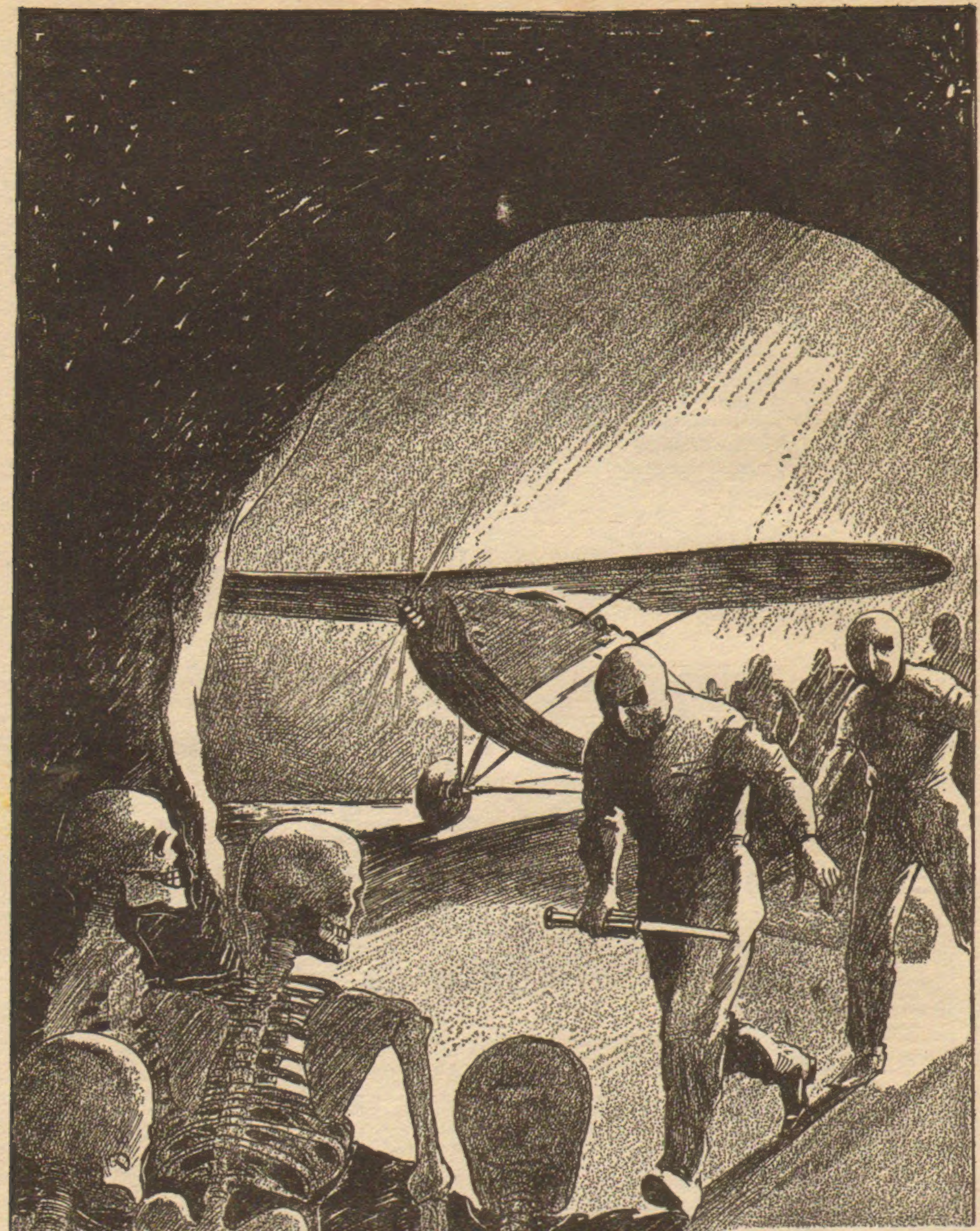
If the moon is of apparent diameter exceeding that of the sun when it first eclipses it or hides it, there will be a lapover naturally, and the eclipse's duration will be measured by the time it takes for the moon to move through the width, as we may call it, of this lapover. So when we have the wonderfully good fortune to witness a total eclipse, to see the extinguishing of the sun and the obscuring of the light which the earth is accustomed to, we may hope always to have a minute or more in which to appreciate the amazing impressiveness of the comparatively rare phenomenon. It is perfectly proper to call it rare, because so few of us see a total eclipse even once in a life time. In the eclipse of recent years which was visible near New York, it was only necessary to jump on a local train and go north for ten or fifteen miles to see it in perfection.

Now suppose we hold a ten-cent piece or a silver half dollar, so as to exactly hide the face of the sun, if we move it a little bit away from the eye the edge of the sun will appear all around it. This is all very simple, and in order to avoid injury to the eyes it would be much better to use a disc of cardboard or any circular object, such as the bottom of a tumbler or some similar disc of convenient size to represent the sun. We find that by moving our coin away from the eye the margin of the disc would appear and the center would remain hidden. All this is extremely simple and obvious.

But the above experiment, if we may dignify it with such a name, represents what takes place in an annular eclipse, for the moon which represents our coin varies many miles in distance from the earth. At its shortest distance it masks the sun with a good margin to spare. At its greatest distance it fails to completely mask the sun, and when it is centered over it, it fails to cover the entire area of the luminary, and the moon is surrounded by a beautiful bright ring of the sun. This type of eclipse sometimes occurs, and is called an annular eclipse from the Latin word "annulus" which means "ring."

As a practical matter we know that the eye should be protected by a dark glass or some equivalent, such as a dark photographic negative, when observing an eclipse. We are told that many people in New England injured their eyes, probably only temporarily, by observing the progress of the eclipse without any protection. One way of seeing an eclipse in safety is to seek out a puddle of water on the road, though these are not as frequent as they were in the days of what we called dirt roads, and you will get in the muddy water a very good and perfectly clear reflection of the sun, and in this way can watch the progress of the eclipse without the least danger to the retina of the eye.

The eastern border of our country has been greatly favored in the last few years in the matter of total eclipses. A short trip from the metropolis of New York brought the observer into the path of totality and we can realize how fortunate we have been when we know that an eminent Japanese astronomer crossed an ocean and a continent to observe the total eclipses, visible in one case in the metropolitan district and in the last case in Maine.



Lieutenant Watson followed close at his heels, having left the propeller of his ship idling. But before they could go far, they were surrounded by skeletons, shouting like madmen. Watson cringed from them, not knowing that they were living men whose flesh had been made invisible by the radium they had handled for so many years.

The World of the Living Dead

By Ed. Earl Repp

WHAT WENT BEFORE: *A yacht carrying a distinguished scientist with his collections has been wrecked at sea. Patti, the daughter of the scientist, owner of the yacht, is sought for by both the Captain and the first officer, who have serious altercations. The yacht is drawn into a great subterranean lake. The crew leave the ship on the beach and wander back along a path beset with skeletons of men and with pitfalls. At last they reach a valley peopled with what seem to be living skeletons, really slaves, who under severe taskmasters are gathering radium ore to be used in the conquest of the earth. The daughter of Dr. Marsden, the scientist, is taken away by the strange subterranean beings who are driving the skeletons in slavery, pure and simple. The skeleton beings turn out to be men whose flesh has become invisible through the action of the radium. The crew of the yacht find that some of the skeletons are of the crew of the U. S. S. "Cyclops," whose wreck lies on the beach of the subterranean lake. The rulers of this strange realm have flying apparatus by which they can rise in the air. For arms they have deadly ray or taas tubes. The mate of the yacht, in love with Patti, possesses himself of a flying apparatus and of a taas tube and escapes to the top of the lofty cliffs surrounding the valley of the living dead, a little world in itself. He is followed by one of the taskmasters, who is attacked by a jaguar.*

Part II—Conclusion

CHAPTER IX

THE sudden, unexpected attack on Bob Allen, by the jaguar-mauled Subterranean, seemed to be one of mad, senseless ferocity unguided by either reason or skill. But that was not the case. Though the warrior was hideously wounded, his throat ripped open in a great gash by the ruthless claws of the monster cat, he was far from the point of senselessness. Bob Allen realized that fact as the warrior rose toward him, dodging, weaving in reckless flight.

Despite his apparent recklessness, there was infinite skill in the creature's rise into the air to engage him in a duel of death. Like a prize-fighter, dodging and weaving to escape his opponent's blows and at the same time looking for an opening for the delivery of a knock-out punch, the warrior came on in irregular flight.

Unskilled as he was in the handling of the strange taas tubes and the flight device strapped on his back, Bob Allen realized his disadvantage in a duel with the Subterranean. But it did not require long for him to learn that if he remained even for an instant in one spot in the air, his demise at the hands of his antagonist would be swift and certain.

Realizing this fact suddenly, he pressed the buttons controlling his flight motor. The tiny propellers whirled at top speed, lifting him like a rocket into the higher air. Guiding his flight with swinging feet, he sent himself through space like a bird with a broken wing. In irregular flight the Subterranean went after him, releasing ray after ray in an effort to send him down, flesh stripped from his bones.

But Bob Allen was rapidly mastering the Subterranean art of individual flight and somehow managed to escape the deadly rays. Being lighter of weight, the warrior darted through the air with greater speed. His deadly approach to close quarters at times flustered Bob. Yet he kept dodging so that the warrior's chances for scoring a direct hit were less certain.

With infinite care he tried to deliver a death blow at the determined Subterranean. Each time, the warrior successfully evaded the rays by a mere twist of his feet that guided him to safety. Rays hissed over Bob. He marvelled at the mysterious guardian that seemed to watch over him, saving him from the deadly radium beams. He returned the rays from his own taas tubes.

Suddenly the warrior darted in close. Bob saw his gashed throat. Blue blood still oozed from the wound. The creature's head was twisted in a grotesque attitude. But the menacing light in his cobra-like eyes told grimly of his determination to destroy his enemy even if he himself died.

At close quarters the creature took deliberate aim. As if to make doubly certain that he would not miss, he hovered perfectly still in the air for an instant. Bob felt his blood run cold when he saw the warrior's death-tube following him like a shotgun following a winging duck. Frantically he kicked his feet. A blue beam hissed from the warror's tube. He heard it sizzle within a yard of his face.

Then by a twist of luck his flight motor brought him up in the rear of his antagonist. Smiling grimly, his lips frozen tight across his teeth, he darted forward. Before the Subterranean could turn around Bob Allen released twin beams from his taas tubes.

With an inward shudder at the deadliness of the strange weapons, he saw the warrior vanish in a puff

of pale blue smoke, which blended so perfectly with the natural glow of the place that it was almost invisible. He caught a slight whiff of scorched flesh. It nauseated him for an instant. But he shook off the feeling of sickness and looked below.

The fierceness of the air-duel had not afforded him an opportunity to observe in which direction the fight had carried them. But he was elated that it had not been over the great crater. Instead they had drifted away from it and in the distance he saw the opalescent glimmer of the subterranean lake. Without hesitation he guided himself toward it.

Wondering if the Subterraneans would continue their pursuit after him, he drew quickly near the lake. He saw at a glance that the *Scienta* was as she had been left. Her white hull gleamed against the blue glow of the background. Her broken masts stuck up like snaggle-teeth. With a look back to see if he was being followed and seeing nothing to indicate pursuit, he dropped slowly toward the decks of the battered craft.

As he came nearer, he thought he saw somebody dodge suddenly across the quarter deck and out of sight. Thinking the Subterraneans had found the ship and were searching her, he steered away cautiously, watching closely, keeping his taas tubes ready for emergency. Then it dawned upon him that the Subterraneans would scarcely dodge out of sight. More likely they would brazenly stand in the open, see who was approaching, and then, if necessary, destroy him with a ray.

His first thought after arriving at that conclusion was that Patti had escaped during the raid and had made her way back to the yacht. Eagerly he descended as rapidly as he could with safety. But before he had dropped a dozen feet something snarled past his cheek. He knew it was a bullet and he felt suddenly afraid that Patti might deliberately pick him off thinking he was a Subterranean. Then he saw a puff of black smoke floating away from the quarter deck and he heard the sharp report of a rifle.

Almost on its heels came another whining slug. He felt it fan his neck. He waved his arms and frantically yelled.

"Patti! Don't shoot! Patti!"

But once more a bullet sang perilously close to him. The third miss! Patti Marsden was a dead shot with either rifle or pistol. She could not be the hidden sniper who was so intent upon picking him off! He wondered disappointedly who it was, knowing that no member of the personnel or crew had been left behind when the yacht was deserted.

But realizing that the sniper might score a hit at any instant, he threw caution to the winds, slowed the propellors of his flyer and dropped down like a plummet. Within a half dozen feet of the main deck he checked his descent by increasing the velocity of the screws. The shock that followed almost jerked his shoulders from his torso. His head snapped forward, chin striking his chest. For an instant his head swam. He felt his feet touch the deck. Blindly he stabbed at the flyer's control buttons, yelling desperately at the sniper to hold his fire.

It would have been an easy matter for him to have turned his taas tubes on the derelict from the air and instantly destroy the sniper. But he had not wanted to do that. Human lives in the Inner World were already held too lightly. Rather than kill the sniper he had risked his life to learn his identity since it was not Patti.

He peered toward the quarter deck from the place where he stood. The deck seemed vacant of life. He yelled again. After a brief moment he saw a weird face loom up suddenly in the porthole of a cabin. Once more he yelled, then waited before going forward to investigate, fearful lest the man might yet shoot him.

Stealthily, a man's head, covered with hair through which a pair of haunted eyes peered forth, slid into view from a cabin door. Bob winced when he saw it. It looked like the head of a madman, grown thick with heavy, black beard and hair. The eyes gleamed like the eyes of a wolf.

"Come on out, mister!" Bob cried at him. "I won't hurt you!"

The head instantly dodged out of sight. Expecting to feel the snag of a rifle bullet ripping through his bare chest, Bob waited. Once again the head appeared. He called again. This time the head remained, eyes staring at him as if the sniper was transfixed. He ventured to advance. The man stepped out on deck suddenly, covering him with his rifle.

"Don't shoot, mate!" Bob halted in alarm. "I'm a friend! Put down your gun! I mean you no harm!"

The man glared at him wolfishly. He looked like a hermit. His head was shaggy. Only his eyes seemed visible. The remainder of his face was hidden behind his thick growth of beard. He was naked except for a strip of canvas tied about his loins. His body was hairy. He had the arms and chest of a gorilla. Bob appraised him with sympathy and curiosity, wondering who he was and from where he had come. Then the man spoke in a tense voice that bore an unmistakable note of ferocity.

"Come forward!" he commanded, keeping his gun trained on him. "Hands down at the sides!"

Bob held his taas tubes down and advanced meekly. Was the man crazy? Or was he just being cautious?

As he drew nearer, the man lowered his gun. Bob saw him run a hairy hand across his brows.

A man!" the shaggy creatured groaned. "God! I was trying to kill you!"

"You're a mighty rotten shot, old man!" agreed Bob. "What's wrong? Why did you try to kill me?"

The man came forward hesitatingly and placed a shaking hand on his shoulder. His glistening eyes suddenly filled with tears.

"I—I thought," he muttered brokenly, "that you were one of those beasts from the crater! It was hard to tell the difference, you flying through the air like one of them."

"Forget it!" urged Bob quietly. "I should have known I'd be mistaken for a Subterranean if anyone saw me aloft. But say—who are you and what are you doing here?"

His fears dispelled, the man stepped back and ran his eyes over Bob. His gaze rested for a long moment on the two taas tubes and then his eyes once more assumed their haunted, fearful look. He gripped his rifle tightly.

"Where did you get them?" he inquired bluntly, as if suspecting a trap, that Bob had joined forces with the Subterraneans and was out to capture him.

"One of them was given to me by a man named Larkin," replied Bob, hoping to gain the other's confidence. He saw the man's eye brighten.

"Larkin?" he gasped. "Is he alive yet?"

Bob nodded.

"He might as well be dead," he said. "He's alive all right—a living ghost! Why, did you know him?"

"He was my chief engineer on the *Cyclops!*" the man mumbled.

"Were you an officer on the collier?" Bob squinted, amazed.

"Commander Britt, sir!" the man stiffened to his full height as if coming suddenly to attention.

Bob transferred the taas tube he held in his right hand to his left, stood rigid and saluted crisply.

"I am Lieutenant Bob Allen of Annapolis, sir!" said Bob. "At your command, Commander Britt!"

The officer returned the salute and extended his hand. Bob grasped it in a firm grip.

"I was in command of this yacht, sir," he said, "when we were sucked into this lake."

"Well," nodded Commander Britt, "as one naval officer to another, sir, we are in a mighty tight fix. You realize that, of course."

"I do, sir," said Bob, "more than you'll ever know. I was captured by the Subterraneans with my employer, personnel and crew. But through Larkin's help, I escaped. I came up here to look for a girl who disappeared when we were attacked. Her name is Patti Marsden. She is the daughter of the yacht's owner. Have you seen anything of her?"

Commander Britt shook his head slowly and looked into the lieutenant's eyes. What he read there told him much. Bob Allen was searching for more than a girl. He saw it in his eyes. Patti Marsden meant more to him than a mere, missing girl.

"I have not seen her, Lieutenant," he said. I have only been here a few hours. If she were hiding here, no doubt the rifle shots would have attracted her on deck."

Bob groaned gloomily.

"I have just about given up hope of ever finding her," he said dejectedly. "It's like looking for a needle in a haystack. She may be dead."

No longer did Commander Britt suspect Bob Allen of being in sympathy with the Subterraneans. He looked him over carefully, admired the cut of his jaw and the determined, hard look in his eyes.

"Don't be discouraged, Lieutenant," he said warmly. "Funny things happen in this world. Me, for instance!"

He grew morose and silent, biting his lips thoughtfully. Bob glanced at him curiously, but said nothing.

"Once," continued the officer, "I was the respected commander of a government ship. Now I am but a hermit, fighting for a chance to live, to get back to the world I once knew!"

"But, Commander——" began Bob eagerly.

The other cut him short.

"No formality now, Allen," he said quietly. "Forget ethics! I'm just Tom Britt now!"

Bob nodded in appreciation of the other's thoughtfulness. They exchanged warm glances that was to seal a friendship that would last for many years to come.

"Thank's, Tom!" said Bob. "But tell me! How did you manage to escape from the Subterraneans?"

"I made a break with my radio operator," said Tom Britt quietly, "and got on the crater's rim. That was years ago. There was a trail leading into the brush. I urged him not to go that way for the Subterraneans would be sure to believe we'd head back for the ship. He went anyhow, hoping to beat them to the ship and send a wireless message to the Surface. I went in another direction and hid in the brush. They must have capturned him, for I've never seen him since. After a long, long time, I got back to the lake, but had to hide in the brush constantly to keep out of sight of prowling warriors. They searched high and low for me, but I dodged them successfully. Finally they gave up, but I've always been afraid to remain in the vicinity of the ship fearing they would be watching."

"They got the radio operator, all right," Bob informed him. "Larkin told me about it. They stripped his bones of his flesh and hung the skeleton over the trail, as a warning of what would happen to anyone else who tried to get away. I killed a number of them to get here. They'll be along, looking for me, I guess."

Tom Britt grew suddenly fearful. His eyes flashed.

"They will come, Allen!" he said. "We'll be killed if they find us!"

"I don't care what they do, Britt!" Bob muttered forlornly. "Patti Marsden is the only thing in this world that I've cared to live for. Now she's gone. God only knows where. I never expect to see her again."

"Don't be a common sculpin, Allen!" said Tom Britt. "Buck up! Officers of the United States Navy don't quit like that! Stiffen up! You may find her yet! But say! What do you suppose I came aboard for?"

Bob looked up curiously, and shook his head in blank wonderment.

"I saw a chance to send a wireless to the Surface," said Britt, beaming with hope of success. "After filling my belly with grub and stealing one of your rifles, I looked over the radio outfit. The batteries were shorted, but I found others in the storerooms. I was hooking 'em up when I saw you approaching. I think we can get out a message now, if we can rig up an antenna!"

Bob was speechless for a moment, then he found his voice.

"You understand radio?" he asked doggedly.

"Of course!" replied Tom Britt. "I know it from battery to spark-gap! Commanders are not as dumb as you young shavetails think!"

"Then why didn't you get out a message from the *Cyclops* long ago?" asked Bob, staring at him weirdly.

"So I would, Allen!" growled the other. "But the Subterraneans boarded her, carried off everything and smashed her wireless beyond hope of repair. They haven't touched the *Scienta* yet. Come on!

Realizing that the Subterranean pursuit might appear at any moment, he followed Tom Britt off the quarter-deck and up to the radio room. They knew that haste was the thing now. If they ever hoped to warn the Surface of its impending fate, it would have to be done now before the Subterraneans raided the *Scienta* in search for them.

Bob saw that Britt had already taken coils of stripped wire from the storerooms. It lay at the radio-room door, waiting to be strung aloft into an antenna.

"I've got the batteries inside, Allen!" said Britt hastily. "We've already wasted too much time chinning! I'll get busy hooking 'em up while you string wire and hook it on to the intake. Lively now!"

Bob needed no urging. Laying aside his taas tubes he grasped a coil of wire. Qickly pressing a button on the control belt of his flyer, he rose off the deck. Tom Britt looked at Bob wonderingly, a pleased smile on his

hair-covered lips, as he guided himself toward the *Scienta's* jagged mainmast. Without waiting further, he turned into the radio room and began hooking up the storage batteries.

While Bob strung the antenna, Britt went about his task with the skill of an expert. In no time he had the batteries rigged up and concentrated on the radio outfit itself. He saw at a glance that it was the latest development in radio. Many new twists and progressive developments had been made since he had trod the heaving decks of the *Cyclops*. But he was expert enough to understand them and lovingly he wiggled the sending key. It did not respond, no spark leaped the gap. He swore softly and inspected the vacuum tubes. It needed no second look to tell him that they were burned out.

With the air of a hungry man sitting down to a belated dinner, he began searching the cabinets in the room. After a brief search he found boxes of tubes. Quickly he replaced those left in the radio and once more fondled the sending key. Instantly the spark-plug flashed. Wiggling snakes of violet flame shot back and forth across the gap. The sputter and crackle of the juice was music to the ears of Tom Britt. He was jubilant. He snatched up a radio call book. Newport News! The name of the naval base in Hampton Roads was the first his eyes lighted upon. It made his blood race. Good old Newport News! Vividly he recalled it. He had been there many, many times. Would he ever see it again?

He recalled suddenly that there had been a war raging in Europe in 1918 when his ship had taken a dive into the mysterious subterranean channel, cutting him off completely from the world outside. How strange! He had forgotten about the war, forgotten even that an enemy agent had planted a time bomb on the *Cyclops* before she left the Barbadoes. The dire straits in which he and his men had been placed had given him much to think about during the past fourteen years.

But his memory cleared quickly. He fingered the sending key again to make sure if he remembered the code. It came to him in a flash. It was something a man could never completely forget, once it had become indelibly stamped on his mind. He heard the sound of Bob's feet on the roof of the radio room. The lieutenant heard the crackle of the spark and called down joyously.

"Great stuff, Tom!" he said in a lively tone. "You've got her working! One second and I'll be through!"

"She's snoring like a sleeping sailor!" Britt called to him. "Lively up there! This may be our last chance!"

"Okay, skipper!" shouted Bob. "Let her go!"

Almost instantly he heard the crackle of a prolonged spark. Tom Britt was calling Newport News. Eagerly he scrambled down to the deck, picked up his taas tubes and entered the radio room. Tom Britt, receivers over his hair-covered ears, sat at the key. His right wrist and fingers were working like lightning. With a nod of approval, Bob sat down at a handy typewriter, slipped a piece of paper behind the feed roll and tapped out his grim message for the great world outside.

CHAPTER X

HIS eyes flashing, ears attuned to pick up any faint reply from Newport News to his rapid-fire call, Tom Britt sat at the key like an image of stone. Suddenly his eyes widened. He turned his shaggy head and glanced at Bob. "I've got 'em, Allen!" he cried exutantly.

"Newport News!"

Bob yanked his completed message from the mill and went to his side. Hunched over the key, biting his lips, Tom Britt began transmitting news that would startle the entire world. Bob Allen knew the code from A to Z. He listened to the crackle of the spark as it responded to the key.

"-. . .-- .--. --- .-. - -. . .-- ... .-. ..- ... . -. .- ...- -.-- -.. . .--. - .. .. ..!"

"Newport News rush Navy Department period!" Bob Allen read, his tired, haggard face aflush with excitement Tom Britt continued at the key.

"U. S. S. Cyclops personnel and crew held captive interior of world by race of people now at zero hour of wiping out all humanity to take over Surface. *Cyclops'* engines blown up 1918 off Barbadoes. Driven ashore by hurricane and sucked into underground river carrying her far into earth's interior. Crew held as slaves by Subterraneans mining radium used in weapons for projecting horribly destructive rays. Transmitting this message over radio yacht *Scienta* another victim of underground river. Crew and personnel also held captive. Captain Bob Allen, Annapolis Lieutenant, at my side following escape from captors. Has vital message for War Department. Must hurry. Pursuit and attack certain. Get this straight. Allen reports gold is only metal immune to Subterranean rays. Gold-plate all bullets, projectiles, airplanes, artillery, rifles, ships, everything for protection. Otherwise Surface defenders will be annihilated quickly. Allen gives position of *Scienta* when she entered underground channel as Lat. 20 three deg. South, Long. 60, Southeast shore Mt. Pelée. Submarines can enter channel safely. Rush help immediately. (signed) Commander Thomas Britt, U. S. S. *Cyclops.*

In tense silence, Tom Britt waited for Newport's reply, wondering vaguely if the operator would consider the message a hoax and pass it up accordingly. Then the reply came, the powerful whistle of the Newport station reaching them both distinctly. So strong was the spark that Bob could hear the code even where he stood. He listened in silence.

"Commander Thomas Britt, somewhere inside the earth," the Newport operator transmitted. "Baron Munchaüsen will squirm in his grave at this. Better take another dive into that subterranean channel and enjoy a few more pipe dreams. We are turning your message over to the Federal Government for investigation. Hoaxers will be arrested and prosecuted. See you in hell, Commander."

With that Newport became silent. Tom Britt leaped to his feet like an insane man. Bob looked at him, ashen-faced.

"They think its a hoax, Britt!" he cried. "My God! How could they pass it up?"

"Of all the half-wits in this world, that operator takes the cake!" Tom Britt stormed, pulling at his whiskers frantically. "The low down sculpin! If I had my hands on him——"

Suddenly a whistle in his earphones diverted his attention. He glared at Bob like a wolf at bay and sat down again slowly. He listened for a few moments, then his eyes widened and his jaws hung open.

"It's Newport News again!" he cried exultantly. "It's

Newport News, Allen! Listen!" The Newport News operator seemed intensely excited.

His sparks sputtered through the earphones like lightning in the sky.

"Commander Britt!" he transmitted in feverish haste. "Commander Britt! Commander Britt! Commander Britt!"

Tom Britt fingered his key with a trembling hand. He threw in the transmission switch and went at it like a demon.

"Okay, Newport!" he sparked feverishly. "Okay, Newport! Britt listening! Britt listening! Shoot!"

He signed off abruptly and hunched over the instruments. Again Bob heard the ripple of the Newport spark.

"Navy Department," the operator began, "has message. Destroyers proceeding immediately from Barbadoes to investigate plight. Our radio-wave finder located your wave interior earth. Location charted exactly. You are fourteen miles below sea-bottom under Mt. Pelee. Allen message at War Department. Beg pardon, Commander. Thought message a hoax. Stand by"

Tom Britt's gleaming eyes bulged with joy. With his phones still on his head, he leaped up, grasped Bob by the arms and did a happy jig. Then Newport's spark lured him again to the instruments.

"War Department accepts Subterranean challenge," the operator stated. "Thanks to Allen for advice and information about gold. Destroyers proceeding at once to Southeast side Mt. Pelee. Anything else?"

"My God, yes!" Tom Britt transmitted his reply. He grasped Bob's written message, continuing. "Allen reports Subterranean tunnels under all important cities of Surface. Subterraneans within striking distance. Tunnel directly under New York, etc., and big enough for airplanes, hundred abreast. Lead to Subterranean world inside earth. Subterranean rays very deadly, shot from tubes, destroy everything but gold. Remind War Department of this vital fact. Subterraneans invulnerable unless foes protected by gold shields. Must hurry——"

Bob suddenly nudged him and jerked a thumb toward a porthole.

"Here they come, Britt!" he breathed. "The pursuit! Look!"

Commander Britt needed no second invitation to look. Through the porthole he could see, far away in the distance, scores of small dots that were rapidly growing in size as they approached. Grimly he turned to his sending key.

"We are about to be attacked, Newport," he transmitted hurriedly. "Attackers approaching from the air. God have mercy on us now! Stir up Washington without delay! Goodbye! Britt."

He yanked the earphones savagely from his head, picked up his rifle that he had leaned against the desk and peered through the port. The Subterranean pursuit was approaching the *Scienta* at an alarming pace.

"Looks like our geese were cooked, Allen!" he barked fiercely. "They'll annihilate us!"

"If they find us," breathed Bob.

"We can't get away now!" snapped Britt. "They'll see us! We'll have to fight it out!"

"Not with that rifle," said Bob quietly. "It's useless. Here! Take this ray gun!"

Dumbly Tom Britt stood his rifle against the bulkhead and accepted the taas tube. He handled the weapon as if it would bite him. Grimly Bob explained how it was to be operated. Tom Britt's eyes brightened with a deadly gleam. He looked again at the approaching horde, realizing at a glance the futility of resisting their approach.

"We haven't a chance even with ray guns, Allen!" he said tensely. "They outnumber us fifty to one!"

"Right!" growled Bob. "But I've been thinking! There is a chance of dodging 'em!"

Commander Britt turned and stared at him hopefully.

"How?" he asked.

"Come with me to the storerooms!" urged Bob. "I'll show you!"

They left the radio room on the run, cleared the companionways in desperate leaps and halted at the storeroom door.

"The diving helmets, Britt!" Bob breathed hard. "We can put them on and slip over the side! They'll never think of looking for us under water!"

"Good!" exclaimed Britt eagerly. "Why didn't you think of it before!"

Without hesitation they went into the storerooms. Bob knew exactly where to look for the diving equipment. Quickly he found two helmets and lead weights. The outfits, made especially for Dr. Marsden's undersea work, were not ponderous or heavy. Nor was help required in donning the helmets which were placed over the head and lashed securely to the shoulders.

The helmets had been made for the scientist under his own supervision and design. They consisted of light, but tough metal headgear. Inside of each was a tube that the diver was to hold in his mouth. The breath of the diver reacted on certain chemicals placed in containers inside the helmet, creating sufficient oxygen for an unlimited period.

Quickly they carried the outfits on deck and then with a coil of rope they stole aft, keeping well out of sight of the approaching fliers. While Tom Britt donned his helmet and lead weights, Bob dropped the rope over the battered stern and made one end fast to the bits. Working swiftly and without bothering to remove from his shoulders, the taas flyer Larkin had given him, he slipped on his helmet. Tom Britt, ready for his dive, helped him with the lead weights, strapping them securely to his feet. Then shoving their taas tubes under the helmet straps allowing them free use of their hands, they went quickly to the rail.

Bob opened the aperture of his helmet.

"You go down first, Britt!" he urged. "I'll give you a hand and then use my flyer to get me down!"

The glanced anxiously toward the oncoming Subterraneans. The pursuit was in full view now. He swore softly and yanked his taas tube from the straps.

"Get over the stern, Tom!" he breathed tensely. "They may see us at any instant and send us to eternity.

Commander Britt, his helmet aperture open, scowled at the fliers.

"Let's give 'em a welcome!" he snapped. "I'm dying to send some of them to hell!"

Before Bob could interfere he jerked his taas tube forth, took quick aim and pressed a control button. Instantly a long, blue beam hissed in a straight line toward the approaching pursuit. The left wing of the Subterraneans faltered. Thin puffs of pale smoke appeared in their places. The right wing broke formation instantly

and dove earthward as if to get out of range. But so deadly earnest was Tom Britt in exterminating them that he swung his tube zigzag fashion at them like a flashlight swung in the dark. The ray caught two fliers close together. He howled with glee when he saw them vanish in puffs of smoke.

"That's giving 'em a dose of their own medicine, Allen!" he cried. "The yellow-livered sculpins! Watch this shot!"

A lone Subterranean flier, hovering just above the brush-line on the horizon, was diving and dodging in irregular flight. The others had fallen from view behind the distant rise. But before Tom Britt could get his taas gun in line with him, a blue ray struck the pilot house of the *Scienta*.

Before their eyes the pilot house vanished. With it went part of the bridge and the radio room. The ray continued on, striking the maindeck, just at the port companionway that led up to the stern deck. A gaping hole opened almost in front of them. A geyser of opalescent water shot into the air through it.

Then Bob got in a shot. With steady hand he lifted the taas tube. Another ray darted forth from the dodging flier. It struck the lake a few yards off the *Scienta's* stern, barely missing them. Water cascaded into the air for many feet. But that was the last ray that particular Subterranean would ever project at a human target. With deadly calm, Bob aimed his tube. The flier was caught in the act of releasing a beam. He vanished in thin air, with nothing more to mark his passing into eternity than a ghostly puff.

"Get overboard, Tom!" Bob snapped at Britt. "They'll be coming on quickly. This time they'll come strung out and we won't have a chance of getting them. Overboard with you!"

Tom Britt, with a satisfied grin on his shaggy face, snapped shut the aperature glass of his helmet. Over the stern he scrambled like a monkey going down a hanging vine. Grimly Bob watched him vanish beneath the opalescent water and then put his shoulder device into action. He rose clear of the stern-rail and dropped slowly into the water. As his feet touched he turned off his flight motor and sank below, wondering what effect the water would have on the device which had become so valuable to him.

He landed upright on the bottom of the lake, saw Britt a few yards away and motioned to him. Britt, looking like some strange undersea monster, his hair waving grotesquely in the little current swirling about him, came up. Bob saw his eyes gleaming through his vision glass. The commander seemed happy over the fact that he had at last dealt a blow at his enemies.

Bob yelled at him, but Britt showed no signs of having heard. His voice was deadened by his helmet and the water, and he drew the commander close to him. With his knuckles he lightly tapped a message in Morse code on the other's helmet.

"Where to now?" Bob asked him.

Tom Britt shrugged his shoulders in reply. Bob began tapping again.

"The fliers might destroy the ships," he told Britt. "It would be dangerous for us in the vicinity. We had better get away!"

Commander Britt nodded and began tapping on Bob's helmet. Bob listened intently, deciphering the code as the short and long taps were given.

"If we can walk across the lake bottom to the other shore," Britt tapped, "we can reach my hideout. It's far up in the subterranean river channel. There's a big cave in there.

"Great!" Bob signaled back. "We'll follow the shore. We might fall into a hole in deeper water. "Let's go! We'll wait in the cave!"

Hand in hand they marched away from the *Scienta*. Inside each helmet was a small depth gauge glowing like a watch dial. Bob noted at a glance that they were at a depth of four fathoms and concluded that they were too far down to be seen from the surface unless an observer was directly overhead. But he felt assured that the Subterraneans would not expect them to take to the water and therefore would not look for them there.

Fearful of stepping into hidden holes, they watched their gauges constantly and painstakingly kept at the four-fathom depth. The going was not difficult as there were few currents to buck. There were many eddies, however, that tugged at them, and strange fish darted away as they went on. Once Bob saw the slinking form of a big shark hovering in the offing, and wondered if his taas tube operated as effectively under water as it did above.

He nudged Britt and pointed at the hovering brute. Britt shook his head, acknowledging that he too had seen the shark. Wondering if it had been sucked into the lake *via* the subterranean channel, he kept an eye on the fish. He calculated that it was some thirty feet long and a man-eater. Its beady eyes stared at them while it darted lumberingly back and forth as if hesitating to attack.

Suddenly it gave a mighty sweep of its tail and charged forward. Bob clutched fearfully at Britt's arm. But Tom Britt had been watching the brute, expecting it to attack. Scarcely had it started forward than his taas tube was snapped up. Bob Allen saw a blue streak cut the water, churning it into bubbles and foam that glistened like myriads of tiny diamonds. A sudden commotion stirred the vicinity of the shark. It ceased almost as soon as it had started. He looked hard at the shark.

The beast was sinking swiftly to the bottom. But its flesh had been stripped from its bones. Its great skeleton sank before them, held intact by its ligaments! It struck the bottom and rolled over. Bob and Tom Britt stared at it in amazement. They could hardly believe that the taas tubes were as deadly under water as out. They were overjoyed that they had no more to fear of the ferocious denizens of land or water.

"God! What a weapon!" Bob reflected as they continued on.

After what seemed hours of labrious plodding across the lake bottom, they began to feel the tug of strong currents. Hand in hand they bucked them, leaning far forward, dragging their leaded feet behind them. The going became more and more difficult until they made little or no headway.

This meant one thing to Tom Britt. They had at last reached the outermost edge of the subterranean channel. To go further into it might bring disastrous results, of being picked up like flotsam and carried on the current back to the *Scienta*, from which they sought to escape. They felt that the Subterraneans had by this time reached the yacht and were searching for them.

Grimly they swung off their course and trudged on at

right-angles toward the beach. The lake-bottom ascended gradually. They watched their depth gauges to make certain they were entering shallow water. The depth indicator rose steady from four fathoms to three and on up until it showed their depth as being less than ten feet. Here they halted and exchanged glances.

Tom Britt began tapping with his knuckles on Bob's helmet.

"You wait here, Allen," he signalled, in Morse code, "while I look for the fliers. They may be flying around here and will see us if we step out of the lake."

Bob nodded behind his aperture glass and watched the commander stride away. Then he sat down, realizing for the first time that he was almost exhausted and ferociously hungry. With his free hand he ran his fingers through the heavy sand on the bottom. Particles of dull gray stirred up floated away. Some of the grains, he noted, were almost as large as peas. He scooped up a handful of sand and looked at the metal particles more closely. They had the aspect of new aluminum, but were much heavier. Where, he asked himself contemplatively, had he seen such metal before? He recalled suddenly that they had encountered prospectors on the Amazon who were engaged in panning platinum from the river. He was no mineralogist, but it required only an examination of the metal and a little thought to tell him it was pure platinum of a far better grade than that which the Amazon miners were panning. And the lake bottom was full of it! Everywhere he looked and as far as his eyes could penetrate the water, he saw the metal mixed with the sand. His eyes widened at the thought of the unbelievable wealth.

He did not realize that the strange subterranean world, into which he had been flung, offered a more precious mineral than platinum. While he knew radium was an element beyond value on the Surface, he was not interested by it. To the average man, gold and platinum and diamonds were the most precious of elements. Bob Allen was no exception. So engrossed was he in contemplating the wealth that lay around him, that he did not see Tom Britt hurrying toward him, his eyes gleaming behind his aperture, every nerve taut.

He came up quickly and slapped his big hand on top of Bob's helmet. Bob nearly jumped out of his skin. The commander beckoned him to follow and together they trudged ashore. Within a few moments their helmets cleared the water. Tom Britt pointed in the direction from which they had come and then at a number of small dots in the air on the distant horizon. Quickly he opened his aperture while Bob, staring silently across the lake, did likewise.

"The ships are gone, Allen!" Britt barked. "Or my eyes have gone bad on me!"

"Why, they are gone!" said Bob in surprise. "The *Scienta's* gone! What——"

"The low-lived sculpins destroyed them, Allen!" stated the commander grimly. "They're flying back to their lousy gopher-hole-of-a-world now!"

Bob looked toward the receding dots. Almost immediately they dropped from view behind the distant rise. He knew that they had descended into the great crater once more.

"Do you suppose——" he began incredulously.

"Of course!" said Tom Britt, as though thinking along the same channel as the other. "They thought we were hiding somewhere in the ships and rather than waste time looking for us, they turned their rays on the hulks. Damned smart of you, Allen, to think of the diving equipment! Without it we could never have escaped! If they'd only had dog-sense, they might have looked for us in the water!"

"But they didn't, Commander!" said Bob with satisfaction. "If they believe they got us by destroying the hulks of the ships, we're safe for the present.

"Safe hell!" snorted Britt. "They'll be back! You mark my words! They may not be certain that they got us. The uncertainty will bring 'em back, scouting! They can't afford to have us loose to get a chance message to our friends. But by Heaven! We did that very thing in the nick of time! Right under their noses, too!"

Bob nodded wearily.

"I hope those inefficient bureaucrats in Washington get busy!" he asserted. "If they don't——!"

"Then they'll see the damndest catastrophe that ever struck the surface of this earth!" said Britt quietly. "But I think they'll do something."

"I hate to see the *Scienta* gone," reflected Bob. "I had hopes of going back to her for some grub. God! I'm starving for food and rest!"

"Well, it's gone," said Britt ruefully, "and so is the *Cyclops* and the others! Not a fragment left! No use standing here looking at nothing, now. If you can eat fish, I'll fill your belly in jig time when we get to the hideout. And you can get a good sleep. Let's go!"

They plodded up to the beach where they removed their helmets and lead weights.

"We better take these things with us, Tom," Bob said wanly.

"We may need them again. Never can tell!"

"Good!" returned Britt. "But you're just about all in! I'll carry 'em! I had a good long sleep before I left the hideout. Feel pretty good. With that flyer on your shoulders, you'll have load enough."

Bob had become so accustomed by now to having the flight device attached to his back and shoulders that he had completely forgotten about it. He wondered suddenly if the water had rendered it useless. Deciding to try it out before carrying the thing further, he pressed the control buttons. Instantly the propellors spun, lifting him clear of the ground. He was pleasantly surprised and dropped down again beside his companion.

"What, what an outfit!" he exclaimed to Britt. "Why even water doesn't hurt it! If we only had another one for you!"

"We'd make a fine pair of Subterranean warriors, eh?" grinned Britt appreciatively. "But no matter now! Don't need it. Maybe later I'll get a chance to skin one off a critter's back! His hide will come with it, you can bet on that!"

A study of Tom Britt's expression was not required for Bob to see that he meant just what he said. The deadly gleam in his eyes, the cold snap that had crept into his voice, told him that. But without further hesitation, they went toward a cavernous opening that ran into a mountain edging this side of the lake. From the hole ran the rapid subterranean river, down which the *Scienta* and the other unfortunate derelicts had swept. From the distance they heard scarcely more than the murmur of the stream. But as they drew near this sound increased, until they could hear the muffled roar of the cascade as it plunged down from the seas above.

CHAPTER XI

THERE'S a narrow shelf of rock running alongside the river," said Tom Britt as they approached the cavern. "I've been using it as a trail for years. It leads directly to my private cave. It's a dangerous hike in the darkness. But I've been over it so many times that I know every inch of it!"

The mouth of the monster cavern yawned ahead of them. It looked like the throat of hell, Bob reflected. But if safety lay far within it, he would go to any danger to reach it.

"Funny the Subterraneans never looked for you in there," he said. "I'm afraid they may see our footprints in the sand and follow us."

"That's a funny thing, Allen!" responded Britt, bent over under the weight of the helmets and lead weights. His big muscles bulged. But he seemed not to mind the load for he bore it like a burden of love. And Tom Britt had learned to love his fellow man more than anything else during his solitary life in the Subterranea. The coming of Bob Allen had awakened him to that fact.

"What's that?" asked Bob, feeling somewhat ashamed of not carrying his share of the diving equipment. But Tom Britt had insisted on relieving him of it and his arguments to the contrary had proved futile.

"Those devils have never entered the cavern as long as I've been hiding in there!" said the commander. "They've flown all around the mouth looking for me. I saw 'em! But not once did they come into the hole. Maybe they thought I wouldn't have the guts to enter it. On the other hand, they may have a healthy fear of darkness. That's my set opinion anyhow. There's a peculiar fact to back it up."

"You mean," said Bob, "that they don't exactly know what darkness is, because they've always lived out here where the blue light never changes? Where there is no change from day to night?"

"Exactly!" said the commander. "They're afraid to enter the black hole on that account. They don't understand darkness. And what they don't understand scares 'em!"

"But why do you suppose they want the Surface when there is darkness there at night?" Bob inquired. "They wouldn't want to live in a place, according to your theory, that is dark part of the time."

Tom Britt shrugged under his load.

"You've got me, Allen!" he grunted. "Maybe they don't know we have night on the surface. If they do, maybe they think they can get used to the darkness. Anyhow, there never was a night on earth as black as the inside of my tunnel!"

"Think they may spot our tracks in the sand?" asked Bob. "Doesn't seem to be enough wind here to blow sand over them."

"You didn't see any tracks I made, did you?" Britt asked. Bob shook his head negatively. "Well," continued the commander, "the sand is so laden with minerals that it settles quickly, covering 'em up. No, they won't be able to follow our tracks."

"That reminds me, Britt!" said Bob with sudden eagerness. "Did you know that the lake-bottom is full of platinum?"

"Humph!" Britt grunted. "I've known that for years. The whole place is full of platinum, but little gold. Gold seems more on the surface. To kill time I did a lot of mining, Allen. I'll bet I've got a couple of tons of platinum stored away in my cave. If I ever get out of here and can take the stuff with me, I'll be a mighty rich man!"

"If you ever get out!" Bob ruminated aloud.

"And if I don't," said Britt bluntly. "I couldn't take it to hell with me! Well, here we are!"

At the mouth of the monstrous cavern, Bob felt no larger than a dwarf. So large was it, so high was its arching roof, that it dwarfed them into insignificance. He saw why it was possible for ships as large even as the *Cyclops* to cascade down the rapids. The tunnel, were it as large as its mouth, could almost accommodate two yachts of the *Scienta's* size, he reflected. He had no doubts as to the depth of the channel, considering that the *Cyclops,* laden with coal and with a draft as great as the average ship, had come through with her plates intact. He was awed by its weird aspect, its awesome greatness.

"I wish to hell," said the commander suddenly as they entered the appalling hole, going in along the edge of the river, "that those Subterraneans had let the *Scienta* alone long enough for me to find a razor! When I see my reflection or shadow I scare myself stiff! I must look like the original wild man from Borneo!"

"You do!" Bob laughed. "I thought you were crazy when I saw you first! Lord! You were blazing away at me like nobody's business!"

"You didn't look so good to me yourself, either," chuckled the commander. "I don't see how I missed killing you! But that was the first rifle I'd shot in fourteen years. When my first two shots failed to bring you down, I felt certain you were a Subterranean, immune to common bullets! I thought my jig was up! I'm still wondering why you didn't turn your ray gun on me!"

"Until I saw you," said Bob, growing suddenly discouraged. "I thought you were Patti Marsden. I had the idea she had gotten back to the ship and was firing at me thinking I was a warrior. But after two straight misses, I knew it wasn't she. She's a dead shot. Or at least she was!"

There was something in Bob's tone that caused Britt to glance back at him over his shoulder. But the darkness of the cavern had already enveloped them in a murky gloom. It was a tone of bitterness, of utter dejection. His heart went out to him instantly.

"She still is, Allen!" he said encouragingly. "And you'll find her sooner or later!"

Bob said nothing. Following along a narrow shelf of rock that was growing more and more indistinct with every step, they left the blue world around the lake behind. Gradually glow gave way to utter darkness, appalling, Stygian night that beat down upon them like a living thing.

The roar of the cascade increased in its intensity until they could scarcely think, much less exchange words. Occasional wisps of spray whipped about them. Here and there on the heard, but unseen river, flashes of phosphorescence warned them of its awesome presence. Carefully, but with a swiftness born of experience, Tom Britt followed the shelf. Bob trailed fearfully behind, holding one of the helmet straps to guide him in the others footseps.

Not knowing the moment he might make a misstep and go spinning to certain doom in the rushing cascade,

he went on with pounding heart. The roar of the stream was appalling, dazing now. Blindly they followed the shelf. Bob wondered how Britt had managed to negotiate it the first time. He thought of many things as he continued on. His heart cried out for Patti Marsden. The uncertainty of her fate—the living skeletons—the Subterraneans. Dr. Marsden and Norton. Then Patti again. Thoughts of her were like things of flame, eating with fiery tongue his whole being.

He recalled suddenly how cruel he had been to her for a moment in the pilot house. How he had cut her short when he thought she was defending Norton's murderous actions.

" 'I'm not interested in the faults of your fiancé, Patti'," he had told her with sarcasm and indifference. " 'nor have I time to listen to excuses for him being a yellow dog—a stabber in the back!' "

He saw again the tears that welled suddenly into her eyes. Then like a voice from the darkness around him he thought he heard a repetition of her reply.

" My fiancé?' " she had cried defiantly. " 'What made you think I was engaged to Captain Norton?' "

There had been other words, harsh and gentle. He lived once more that precious moment, when Patti had stood in his arms, and once again he heard her soft voice, faltering, but frank.

" 'I want you to know'," she had told him, " 'before the *Scienta* takes us down, that I—I—I love you, Bob Allen'."

His heart raced and his blood pounded through his veins. The roar of the cascade suddenly brought his mind down to the grim, awesome cavern and its appalling blackness. He felt his foot slip frequently on the sheer edge of the shelf-like trail. Each time he recoiled from certain death, realizing that should either of them tumble into the boiling cascade, drowning would be a matter of seconds.

With a shudder, he clung to the helmet strap, following Britt. They might have been blind. The blackness, ominous, unspeakable, closed their eyes. to everything but occasional red dots that flashed, from the strain of constant peering, before them.

"God!" Bob groaned frequently, aloud. "If there was only a light! Just a twinkle to break this damnable blackness!"

He did not even hear his own voice. He wondered how much further away Britt's hideout could be. Silently he prayed that they would soon come to it.

After what seemed hours of walking hand in hand with death, Britt suddenly halted. Bob collided with him, almost toppling into the cascade. Britt clutched at him and held him to the trail. Then he placed his mouth close to his ear and yelled.

"Turn off to the left!" the commander warned him. "There's a step-off dead ahead about ten paces! Turn left right now! The cave is up just a little way!"

Bob gave him a double tap on the arm to signify that he had heard. Again they started, turning to the left abruptly and climbing up a gradual grade. After a moment the roar of the water began to subside. Bob wondered if they were leaving the river. At length Britt stopped again. The roar of the cascade was muffled as if between thick walls. He heard Britt place his burden of helmets on the floor of the Stygian tunnel.

"What's up, Tom?" he asked tensely.

"Here we are, old man!" returned Britt with enthusiasm. "We've reached my cave where I've been playing Robinson Crusoe, since I gave the Subterraneans the dodge! Stand still! I'll light a fire!"

"Got matches?" Bob asked incredulously.

Britt chuckled.

"Nope!" the commander grunted. "But something just as good when you know how to work it. Made it myself. It's a fire drill. Learned how it's done from the Sioux Indians out west when I was a kid. Never forgot it. Damned glad, too!"

Bob sensed Britt groping around in the darkness. Finally he heard him give a grunt of satisfaction. Quickly thereafter he heard the gentle hum of an Indian fire-making stick spinning in a whirling-bow. Long before he could see flame, he smelled smoke and knew that Tom Britt was on the verge of striking fire.

In a moment he saw a small red glow some feet away from him. Above the muffled roar of the cascade he heard the commander exhale his lungs on the glow. Quickly it became a little flame which he built up until a comfortable fire began illuminating the cave. The light stung their eyes, but so welcome was the blaze that they did not mind that momentary unpleasantness. Even the smoke, pungent though it was, went unnoticed after a bit.

"Next time we navigate that trail, Britt," said Bob, warming his hands at the blaze, "we'll do so under torch light."

"We'd have done so this time, Allen," said Britt, "had I not used my last torch going out. Light is bad anyhow, for a fellow trying to save his neck!"

"Where did you get the wood to burn?" asked Bob, glancing at a pile stacked neatly to one side.

"Drift wood," replied Britt. "It can be snatched from the river as it goes by. Do it under torch-light. Catch fish, too. Sea trout and salmon! Never knew salmon to come this far south. But they're in the river, nevertheless. Hungry?"

"Don't ask!" grimaced Bob. "Just hand me a raw fish and see!"

"Well, we don't eat 'em raw," said Britt, grinning. "I like 'em roasted or broiled. Caught a nice mess before I went down to the lake."

"How?" asked Bob, watching Britt go about the task of preparing a big silver-gleaming salmon for the fire.

"Spear!" said the commander bluntly. "It's easy!"

Bob noticed after a few moments that the fire-smoke no longer stung his eyes. The cave quickly cleared as the pungent smoke was wafted away by little draughts of warm air that fanned his body. Already Tom Britt had a big salmon hung over the fire on forked sticks. He saw the commander walk to a small tin box near the woodpile. He returned quickly, the flames casting his grotesque shadow on the walls behind him.

"Drape this around your palate while we're waiting for Sam Salmon to broil, Allen," he invited, handing Bob two round cakes that had the aspect of flap-jacks.

Bob accepted them with interest and hungrily sank his teeth into them. He found them somewhat gritty, but delicately sweet-scented and tasty. He gobbled them up quickly and smacked his lips.

"Damn good, Tom!" he enthused, anxious for more. "Great! What is it?"

"Tortillas a la Britt!" grinned the commander. "Found a kind of a berry down by the lake. When they are dried they pop open, filled with barley-like seeds. I

gathered a lot of them and ground 'em up Indian fashion. Takes the place of bread on my meager table. But better than none, eh? Then there is a trickle of fresh water along the lowest part of the floor of the cave."

Bob nodded in admiration for this man who, in the face of such great odds, had managed to eke out an existence in a strange world where the average person would give up in despair. But not Commander Britt. Here was a fighting man if ever there was one and Bob warmed to him.

"For a seafaring man, Britt," he said, "you're a mighty good Injun!"

"Thanks!" mumbled the commander.

He went about his culinary tasks like an expert, while Bob sat down wearily beside the fire. In no time, Britt saw his heavy lids drop.

"Snap out of it, Allen!" he said at length. Bob awakened with a start. "Let's eat! You can sleep better on a full stomach!"

Bob had no idea he had dozed so long. Already the commander had portioned out the cooked salmon on slads of wood. He handed him his portion of the fish, flanked with tasty cakes. They settled down to eat in silence. Bob ate voraciously and never hesitated until he had cleaned his slab. Britt, watching him from across the fire, his eyes blazing like those of a wolf, handed him another helping. Bob accepted it graciously.

At length he laid aside his emptied slab, licking his chops.

"Have some more, Allen?" asked Britt quietly.

"No thanks, Tom," Bob replied. "I've already eaten too much. Feel like a bloated hog! But Lord, I'm dead tired!"

Britt placed some wood on the fire and jerked a thumb toward the far side of the cave behind him.

"Can't offer you a feather bed, old man," he said, grinning, "But there's a bunk over there by the wall. Brought twigs up from the lake for bedding. You'll find it right comfortable under conditions. Better take a sleep. I'll watch."

"Think I will, Britt," nodded Bob sleepily. "Thanks. Be sure to awaken me if anything pops up.

Commander Britt watched him quietly as he strode past the fire. In the gloom, just beyond the circle of light, Bob found the bunk on the floor. He lay down, and was sound asleep almost before he stretched out. Britt rose and covered him with a piece of frayed, worn canvass. Bob Allen lay like a dead man, lost even to dreams.

How long he slept he had no way of telling. Meanwhile, Tom Britt allowed the fire to die out. Four times he rebuilt it to eat while Bob slept. Tirelessly he kept his vigil, going at times to the edge of the river to sit and watch and wait for any indications of help from the Surface that might be brought to him *via* the cascade. While waiting and watching here, he fished with his spear in the darkness. His spear was actually a boat-hook, sharpened to a point and rubbed to a blade along the projecting horn. By thrusting it blindly into the stream he caught salmon and trout, whose violent wiggling on the end of the pole told him he had made a catch.

Marvelling at Bob's capacity for sleep, though realizing that the lieutenant had been virtually exhausted, he at length rebuilt his fire again to broil a big sea-trout. Bob stirred at length, flexed his muscles and yawned, wide awake. He saw Britt kneeling beside the fire.

"Just in time for breakfast, Allen!" the commander greeted him. "Fish and Tortillas again!"

Bob stood up and came forward, shivering, to hover over the fire. Inactivity had chilled him. He flexed his muscles again. Good enough for me, Britt!" he replied with enthusiasm. "How long have I slept?"

"Oh, about six meal-times!" grinned the commander. "This makes the seventh. Guess you've been dead for twenty-four solid hours!"

"That long?" Bob was incredulous. "And you've kept watch all that time?"

Britt nodded.

"Sure!" he said. "That's nothing!"

"Anything happen?"

"Not a thing! Not even a hint of that rescue party supposed to have left the Barbadoes!"

"Takes time," said Bob grimly. "Expect they'll have trouble finding the entrance to this place. It's under water, you know."

"They'll probably put down a couple of divers to search for it," said the commander in a hopeful tone. "But I don't know. I've got some doubt if they'll ever find it!"

"Like looking for a needle in a haystack, I admit," Bob acknowledged quietly. "Still, I think the chances are about even."

"I admire your optimism, old man," retorted Britt. After living as I've lived for fourteen years, you kind of lose hope in everything."

"But you never had a chance to radio for help," Bob reminded him. "That's a mighty big something!"

Britt turned his broiling trout over the fire in thoughtful silence.

"I've been wondering, Tom," Bob added, "if there's any way of following the river up to where it comes in from the open sea. Ever been up there?"

"Years ago, Allen," said Britt, looking up curiously. "The water comes into a big hole like a millrace. You could never hope to get out that way, even with diving equipment. It's easy to come in, though, providing a diver wore a life-line. Otherwise he'd be carried down the cascade into the lake, his body smashed. The sea flows into the subterranean channel like water coming out of a fire-hose!"

For a long while they sat by the fire, watching the trout sputtering as it cooked. Finally Britt announced it done and quickly portioned it out on the slabs. Once more Bob ate a meal of fish and the commander's tortillas which he considered real good.

His appetite satisfied, he laid aside his slab, declining Britt's offer of another generous helping. The commander finished and regarded him thoughtfully.

"We have nothing to do now but wait for developments," he said, sensing the other's restlessness. "If you want to go up there and look around, I'm willing."

"I'd like to, Commander," replied Bob earnestly. "We might discover something. Besides, I've an idea I'd like to try to work out there."

"What is it?" Britt inquired curiously.

"Just wait," Bob's eyes gleamed in the firelight. "We'll go at once and—don't forget to take the taas gun I gave you. Might have use for it!"

Quickly Britt fashioned several torches, using sticks of pitch-soaked planking he had salvaged from the river. Then under a sputtering light they deserted the cave and once more began the perilous journey along the cascade's

spray-drenched edge. But under the torch-light the going was less hazardous than it had been coming up from the lake.

Clutching his taas tube in one hand and a torch in the other, Britt led the way. The roar of the cascade engulfed them like the thunder of heavy artillery in continuous action.

CHAPTER XII

IN time they reached their goal, cut off from further advance by a sheer wall. In the dim light of a torch, Bob saw a monster arched hole in the rock through which thundered the roaring cascade. The sea water, boiling madly, poured through the cavern solidly and swept away down the channel toward the subterranean lake.

But the rocky trail they had followed had taken them far above the top of the great arch. Perched high up on a narrow ledge of rock they looked down upon it. So appallingly swift and thunderous was the cascade that they stared down in awe and horror. The boiling water tore through the wall like leakage through some monstrous dyke.

Spray whipped over them like clammy fingers struggling to snatch them from the ledge to death. Staring at the arch, Bob recalled how the *Scienta's* mizzenmast had been snapped off, hurling the horrified lookout into the raging breakers. He realized that this same arch had sheared it off as the yacht plunged into the channel from the open sea, the monstrous breakers pushing her in with their driving power. He wondered suddenly how thick the wall might be between them and the sea outside. He drew Britt's head close to him.

"How thick do you think the wall is between us and the sea, Britt?" he yelled into the commander's ear.

Britt shrugged his shoulders.

"Can't be very thick!" he shouted, holding his lips to Bob's ear. "It's like a shell. When the *Cyclops* shot through the hole, she was only under water a few seconds before she cleared!"

That was exactly the way the *Scienta* had entered the Subterranea, Bob reflected. She had been smothered in water only a few seconds and then had cleared. Thereafter they had felt her sliding swiftly down the rapids. He concluded suddenly that the wall of rock through which the cascade plunged was nothing more than a shell. He motioned Britt closer to the wall, pausing again within a few feet of it.

"I'm going to try to work a hole through the wall with the taas gun, Britt!" he yelled into the other's ear. "That was my idea! Maybe it'll work!"

Britt's eyes popped open. Then he shook his shaggy head eagerly. Why not try it? Didn't the mysterious weapons of the Subterraneans possess the power to send steel ships into thin air? Why couldn't a radium beam bore a hole through the rock wall?

Urged on by the theory that there is no obstacle that there is not someway around, or over—or through, Bob firmly planted his feet on the ledge and aimed his tass gun at the wall. Grimly he pressed the buttons. The tube recoiled slightly in his hand as a blue beam, made brilliant by the darkness of the cavern, drove at the wall. There was a shower of weird, glowing sparks over them. They ducked, trying to shield their partially-nude bodies from the burning fragments.

Shutting off the ray, they went forward eagerly to see the results. Holding a flaming torch close to the rock wall they observed that the ray had penetrated to depth of several feet, forming a round hole approximately two yards across. They exchanged joyous glances. Determinedly they retraced their steps to the ledge. Then grasping Britt's ray tube together with his own, Bob let loose twin rays that showed in the gloom like glowing wires.

Holding the two tubes together, their twin beams biting into the wall, casting back a shower of sparks, Bob held to his task with grim determination. He stood firmly planted on the ledge, unmindful of the stinging sparks now, unmindful of everything but the fact that he was carving for himself and his friends a certain avenue of escape.

The blue beams bit into the rock with a sizzling hiss. Molten lava streamed from the hole and splattered the rocks under it. Then suddenly there was a violent puff as the rays shot clear of the wall and spend themselves in the open. Brilliant sunlight filtered in upon them from the world they loved so well. Outside glistened the open sea. Tom Britt stared through the hole like a man in a trance. Bob was amazed. He felt a lump rise in his throat. Then joyously he thumped the commander on the bare back. Together they rushed forward, braving the chance of slipping into the cascade. A breath of hot air swept over them from the hole. They realized instantly they could not crawl through to freedom until the rock cooled.

Impatiently they waited on the ledge, watching the open sea through the cylindrical opening in the wall. The hole, flooded with light, gleamed like an evil eye. But outside the sea shimmered, calm and unruffled. The roar of the cascade shut out any sounds the breakers outside might have made, as they uncurled themselves upon the rock-clad shore.

As they waited, Bob wondered what might be taking place back in the big crater where the animated human skeletons toiled laboriously at the taas extractors under the watchful eyes of their Subterranean guards. Had the Subterraneans learned of Larkin's part in effecting his escape? He wondered if they had and had forthwith put him to death. He thought of Dr. Marsden, wondering what he had thought when he discovered that he, Bob Allen, had escaped to the crater-rim. In silence he stared, unseeing, through the tunnel, meditating.

Tom Britt, engaged in thinking of other things, silently contemplated the hole. His eyes glittered in the gloom. Now that escape from the blue world he hated was almost a certainty, he thought of home. Home? The word was like a magnet.

He had lived at Cape May, New Jersey. Home was a moderate-sized bungalo, set back among green poplars, vine-covered. He wondered if his wife and two boy children still lived there. It had been fifteen years since he had last seen them! The boys would be 16 and 18 respectively now. What if his wife, believing him dead, had married again? The thought startled him. Something like stinging tears burned in his eyes. He turned his head so that Bob might not see them. His lips quivered as he began debating with himself on the question of his return home. Perhaps it would be best to remain away. Unselfish as he was, he despised the idea of disrupting a possible happiness that rightfully belonged to his wife had she married again.

He shook his head sadly and abandoned the matter for later consideration.

"Let's crawl through, Allen," he nudged Bob with his elbow. "Ought to be cool enough now. God! How I want to see the outside once again!"

Bob nodded eagerly. They scrambled over the rocks toward the tunnel. A cool draft struck their perspiring bodies. It was like medicine, stimulating them. Britt tested the heat of the rock with his hand and grunted. Then putting aside their torches they crawled into the tunnel on hands and knees, the commander leading the way. He scrambled forward like a badger, skinning and bruising his knees in contact with warm, gritty debris.

So swiftly did he go that Bob found it difficult to keep up with him. Suddenly he heard the commander give a grunt and saw him vanish. There came to him a stream of curses. Fearfully he hurried forward, slowing his advance when he neared the end of the tunnel. Looking over he saw Britt picking himself up from the rocks at the bottom of a rocky incline.

"Hurt, Britt?" he asked, his head and shoulders projecting from the tunnel. He blinked hard in the brilliant sunlight.

"Scratched a bit," Britt replied. "Luckily the drop was no higher! I came out a little too fast."

Quickly Bob slid down the rocky incline and landed on the rocks below. The drop was scarcely more than fifteen feet and he slid down safely. Small ground-swells tossed gentle breakers on the shore not far away. The sea seemed utterly deserted except for a smudge of black smoke rising from some tramp steamer just beyond the horizon.

Eagerly they searched the sea for signs of the destroyers the Newport radio operator had said were on their way. But the sea was like a corrugated mirror, devoid of anything but the smoke smudge in the distance and a herd of sea lions playing off shore.

"They've had plenty of time to run down here from Barbadoes!" snapped Bob impatiently. "Do you think——?"

"I don't know what to think, Allen," said Britt gloomily. "They've had time to make the run. I just wonder if that Newport operator was playing a joke on us, thinking we were hoaxing him!"

"Good God!" groaned Bob anxiously. "He couldn't do such a thing!"

"The nincompoop might have!" barked Britt. "Anyhow, all we can do is wait! If we leave this spot, we may never find it again. We've got to stay!"

"I had no intention of leaving until I find Patti Marsden and see her father and the others released!" said Bob with determination. "I'd be a cad to run away now!"

Britt nodded and glanced at the rocky side of the mountain rising above them. There was no sign of a subterranean stream entering there anywhere. Quickly he concluded that the mouth of the cascade was below the level of the sea. There was a little bay, filled with whirling eddies and currents where the mouth ought to be. He drew Bob's attention to it.

"That must be where we entered the Subterranea, Allen," he said evenly. "Looks mighty deep there! The mouth of the cascade must be below sea level."

Bob contemplated the inlet-like bay for a moment, then he detected something lying on the shore not far away that galvanized him into action.

"There's a man lying over there, Britt!" he said, starting toward the body that was partly hidden behind a boulder. Britt looked.

"Sure enough!" he grunted.

Together they scrambled forward and within a moment were bending over the body of a man garbed in blue dungarees, his eyes staring wide and sightless at the blue sky overhead. They were filled with gnats. A ghastly gash ran the length of his head. He lay in a grotesque attitude and they saw instantly that he was dead. The face was somewhat bloated and deterioration had already begun. But Bob recognized the man almost at a glance.

"Why it's Jack Taylor!" he exclaimed.

Britt looked up in surprise.

"You know him?" he asked sharply.

"Of course," replied Bob with a shudder. "He was one of the *Scienta's* seamen. I sent him to the crow's nest before the yacht took her dive! The mast was snapped off when she entered the cascade. The poor devil was thrown overboard and must have drowned!"

"Well, he's better off than Larkin and the others!" replied the commander. "Might as well bury him!"

They laid aside their taas guns and began piling rocks over the body. Scarcely had they laid down the last stone on the mound than they heard the scream of a ship's siren somewhere off shore. They looked up quickly. From around the bend of the shore, scarcely a mile at sea, raced a destroyer, her funnels belching smoke. Behind her came another, their decks alive with activity.

Bob was awestruck by their sudden appearance. For a moment, as he watched them come into full view, he seemed speechless. Then with a yell, he snatched up his taas tube and scrambled down the beach, clearing rocks and débris in long, eager leaps. Britt followed, close on his heels, yelling like a madman.

From around the bend came two more destroyers and then another. The trim fighting craft, decks cleared for action, swept up and then swung seaward in a great circle as if their commanders had just found a position they sought.

Suddenly the destroyer in the lead sounded her siren in three long blasts. The shrieks rent the air like dagger blades. The flotilla of five grim fighters slowed down. The lead destroyer let go her mud-hook a good mile and a half at sea. The others followed suit and they came to rest in a line, their bows pointing shoreward with the outgoing tide.

Bob and Commander Britt howled and danced with glee. They waved their arms to attract the attention of the officers on the destroyers' bridges. Tom Britt could scarcely believe his eyes. The trim craft, bristling with guns and flying the Union-jack, were different from the submarine destroyers in service fourteen years previous. These seemed more deadly and perhaps somewhat longer and narrower as if to increase their speed. They danced on the ground swells like bobbing corks.

The two bedraggled castaways leaping and yelling like insane creatures on the beach, had no doubts about having been seen. From where they were they could see officers on the various bridges, watching them through powerful glasses. Suddenly there was a clang of bells aboard. Small boats were swung outward on their davits and let down into the sea, filled with armed blue-jackets. The boats, propelled forward by cough-

ing motors, swept swiftly ashore. Bob and Britt waded waist-deep into the water to meet them, unmindful of the breakers and the rocks around which the waves cascaded.

Blue-jackets and officers alike leaped into the water and waded ashore, Bob and Britt jabbering at them excitedly. The boats backed away from the treacherous rocks and hovered just off shore to the tune of their sputtering exhausts. Once on the rock-clad beach, an officer wearing a commander's gold braid stepped forward and humorously appraised the excited castaways. They looked, no doubt, like beach combers. The blue-jackets, eyes flashing, hard-jawed and eager for action, stood at ease with their respective C. P. O's.

Tom Britt stepped forward to greet the commander.

"I'm Tom Britt," he said, scarcely able to control his emotions. "I was commander of the *Cyclops* when she left the Barbadoes in 1918!"

The other appraised him closely, an amused twinkle in his gray eyes. Commander Britt fidgeted uncomfortably, but held his ground.

"Oh, I know I look like a heathen beach comber, Commander!" he added at length. "But it's the truth, sir! I am Commander Thomas Britt of the *Cyclops* and this young man beside me is Lieutenant Allen, Bob Allen, of Annapolis!"

A dapper young officer strode up to the destroyer commander's side at the mention of Bob Allen's name. Quietly he surveyed Bob and then with a happy light in his eyes, stepped forward.

"Allen!" he cried. "Bob Allen of all things!"

Bob looked at the man and then sprang forward to greet him.

"Why you son-of-a-sea-cook!" he yelled. "Hal Barnes!"

They greeted each other vociferously, like long-lost friends. Bob Allen and Hal Barnes had graduated together from Annapolis, had trod the same decks together, and had parted company when Bob was transferred to the submarine division of the Atlantic Fleet. Tom Britt and the commander looked on.

"So you're the Captain Allen we set out from Barbadoes to locate, eh?" asked Lieutenant Barnes, his suntanned face aglow with pride in their reunion.

"I'm the sculpin, Hal!" grinned Bob.

Lieutenant Barnes turned snappily to his commander.

"I was at Annapolis with Lieutenant Allen, sir," he said stiffly. "Anything he says can be considered as truth. I've known him for years, should you doubt further the veracity of the radio message from him you picked up at Newport."

The commander nodded and extended his hand. Bob grasped it eagerly.

"Newport advised me that the message might be a hoax," said the commander sternly. "Washington thought it best to investigate anyway, thinking there might be a chance of clearing up the mystery surrounding the *Cyclop's* disappearance. I must admit, gentlemen, that you certainly have the appearance of beach combers. I'm sorry if I've been hasty in doubting you."

He turned to Commander Britt with a grin, and thrust forth his hand which Tom grasped readily.

"Commander Britt," he said quietly, "it is a pleasure to meet you! I am Commander Adams in charge of the destroyer flotilla. Please accept my apologies, sir!"

"Of course!" answered Britt in delight. "I thought you'd never get here! The pleasure is all mine, Commander!"

While Bob and Lieutenant Barnes renewed old acquaintances, Britt enticed Commander Adams aside.

"What's all this about the surface of the earth being attacked, Commander?" asked Adams as they went.

"It's the great God's truth, Adams!" swore Britt firmly. "It sounds unbelievable, but the inside of the earth is inhabited by a race of strange peoples, warlike in the extreme, who want the earth's surface and plan to get it by wiping out all humanity! According to Allen who recently made good an escape from the Subterraneans, they are at the zero hour of their carefully planned attack! Here! Look at this, sir!"

He paused and displayed his taas gun to the amazement of Commander Adams. His eyes hardened as Britt explained its deadliness and how, with it, they had managed to clear a hole through the wall of rock, permitting them to come into the open on the beach a few hours previously.

"And every sculpin of a Subterranean warrior," added Britt quietly, "is armed with one of these gadgets! It's the deadliest weapon I ever saw, sir! It can make a most hideous cripple out of a man. It can blind him, or it can strip the flesh from his bones! Moreover, I could aim this thing at one of your destroyers and cut it in half!"

"No-o-o-o!" Commander Adams was incredulous.

"I've knocked Subterranean fliers out of the air!" insisted Britt. "Nothing was left of them but puffs of blue smoke!"

"But what about the *Cyclops,* Britt?" Adams asked. "Where is she?"

"There is no more *Cyclops!*" said Britt. The Subterraneans destroyed her completely as she lay grounded in a lake inside the earth!" He jerked a thumb toward the little bay. It looked small under the towering mountain that rose above it. But Adams saw at a glance that a large ship could put in there. Britt continued. "There's an underground river dropping into the interior from that inlet," he said. "A submarine could make it easily. But that's where the *Cyclops* took her dive! She cleared the mouth during a storm, snapped off her masts on the rocks and was swept inside the earth on a roaring cascade that runs down to a lake. The Newport radio operator said the radio-wave finder gave our position when we sent our message, as being fourteen miles below the sea bottom!"

"You sent a radio message from the *Cyclops,* then?" Adams wanted to know.

"No!" grunted Britt with impatience. "It was sent from the power yacht, *Scienta,* which, like the *Cyclops,* was sucked into the interior by that same cascade! She was destroyed shortly after we got our message through!"

"Where are the ships' crews?" asked Adams earnestly.

"Inside the earth—slaves!" stormed Britt ferociously. "There were three hundred persons on the *Cyclops* after a German bomb exploded in the engine room and killed nine men of the black gang. All of them were taken prisoners by the Subterraneans, including myself. But I got away from them years ago. Been hiding like a hermit, constantly hunted, since then. I don't know how many of the original number are living now. There were thirty-seven in Allen's outfit, one of them

a girl. He's been searching for her. Case of the heart, you know!"

"And what's that about gold being the only thing nmmune to the radium rays?" inquired Adams weirdly.

Allen experimented with the rays on a gold ring he took from the flesh-stripped skeleton of his cabin-boy," replied Britt. "Gold, as far as we know, is the only thing immune to the rays! The beams, he said, don't seem to touch it! But they'll destroy your ships before you could weigh anchor! Moreover, the Subterraneans wear metal armor made of some radio-active metal. By this armor they are immune to our bullets! Lead and steel slugs alike disintegrate just as they strike the lousy sculpins!"

Commander Adams was silent for a few seconds and then he spoke in a stern voice.

"In that case, Britt," he said decisively, "there is nothing we can do. We are not equipped to engage the Subterraneans under those conditions, even if we could hand them a surprise attack."

Tom Britt nodded understandingly.

"That's what I suspected," he asserted. "You haven't had time to equip your commands with protection against the rays. It will take gold-plated bullets to be effective on the devils. It would be slaughter to send men against them now. But a surprise attack would be easy, for that would be the last thing they expect. We could enlarge that hole Allen cut through the rock with the ray guns. Through it we could enter and surprise the Subterraneans."

"A couple of well-placed sixteen-inch projectiles would turn the trick," reflected Adams, "if the thickness of the wall is no more than you have calculated."

"It's about twenty feet thick!" vowed Britt. "But to blast it out would warn the Subterraneans of what was taking place. They'd know immediately that the Surface had been warned. I think the two ray guns will suit our purpose and if a hole big enough is made, airplanes could enter. Once they got inside, it would be easy sailing, for the caverns are big enough to hold dozens of air ships flying abreast! The inside of the world proper is a mighty big place. Air planes would be like microbes flying about in an empty ostrich egg!

"Well, I'll radio Washington for orders," said Commander Adams. "I expect the aircraft carrier *Langley* and the cruisers *Virginia* and *Wyoming* to drop anchor in a couple of days. They were ordered to Newport News for war equipment. But let's get aboard!" He turned abruptly to Lieutenant Barnes. "Lieutenant!" he called crisply. "Establish an outpost here and come aboard!"

"Yes, sir!" responded Barnes, turning back to Bob. "Well, I'll see you aboard the *Bangor,* Allen! Got a lot of dirt to tell you!"

Bob grinned in anticipation and followed Britt and the commander toward the small boats. Adams signalled to one of them. It sputtered ashore. They boarded it immediately and set out for the commander's headquarters aboard the destroyer *Bangor.*

On their arrival, Commander Adams escorted them to his private quarters where Britt received the attentions of the ship's barber. Adams donated a commander's uniform which fitted perfectly. A lieutenant offered Bob a spare uniform and they appeared at mess in shipshape.

Shorn of his bushy black beard, Britt had the features of a hard-bitten fighting man. The change was so complete that Bob would not have recognized him were it not for the bitterness in his voice. His chin was square, his lips firmly compressed. His eyes were like those of a hunted animal, furtive, flashing, always alert. He fitted snugly into Adams' uniform and except for the pallor in his sunken cheeks his long absence from a ship's bridge would scarcely have been suspected.

Between bites of food, he told of his harrowing and incredible experiences in the Subterranea—the world of the living dead, as Bob had rightfully dubbed it. The officers listened in astonishment, occasionally prodding him with questions. Bob ate in silence. Frequently he was aware of staring eyes upon him. A less authoritative person than Britt telling such weird tales, would have been laughed at as mad, crazy. But faces paled and went white at his mention of the deadly radium weapons that the Subterraneans would use upon the Surface and its inhabitants if they could. Heads wagged incredulously, yet they knew Commander Britt was not fabricating or yarn-spinning. His was a straight-forward story, shorn of dogmatism and egoism, one that would go into the archives of Washington as a matter of public record, for while he talked in his convincing tone, his words were jotted down in shorthand to be dispatched *via* radio to the War and Navy departments of the United States.

A week of restless impatience followed, during which both Bob and Britt paced the decks of the *Bangor,* always looking North for signs of the belated *Langley* and her escort of battle cruisers. On the seventh day they sighted thick smudges of smoke far away toward the North. They calmed down and waited, realizing that at last the Inner World was to be attacked upon the arrival of the oncoming flotilla.

CHAPTER XIII.

EAGERLY Bob Allen and Tom Britt watched the swift approach of the flotilla from the bridge of the destroyer *Bangor.* In no time, it seemed, they hove up and dropped anchors scarcely half a mile away. The aircraft-carrier *Langley,* carrying her brood of trim, fighting planes, came to anchor further at sea so that her pilots might clear the warship's masts without fear of collision.

Scarcely had she dropped her mighty mudhooks than the blinker system on the towering mainmast of the Flagship *Wyoming* began to shimmer out a message to all staff officers that an immediate conference was to be held aboard. Quickly Commander Adams and his staff including Bob and Britt left the *Bangor* in a small boat and headed at a rapid clip for the flagship.

Hard-faced officers assembled in the admiral's quarters. Once more Commander Britt repeated his harrowing, incredible tale of his experiences in the Subterranea. Bob recounted his exploits from beginning to end. Even the admiral, hard-boiled and blasé as he was, arched his shaggy brows in amazement.

"It is my conclusion, gentlemen," said Bob grimly in closing, "that we can hand the Subterraneans a decisive lesson in a surprise attack from the crater-rim, providing our marines and equipment are prepared to face their deadly radium rays. I hope the Navy and War Departments have followed my advice in that regard."

He looked squarely at the admiral. Admiral Haight, white-haired, vigorous and stern-faced, pursed his lips for a brief moment and then spoke.

"We are prepared, gentlemen!" he said in a hard, brittle voice.

"Then," said Britt quietly, but with a deadly note in his voice, "what is to prevent us from entering the Subterranea immediately?"

"With my two radium guns," said Bob, "I can cut a hole through the mountain large enough to admit our aircraft. With the aid of beacons and floodlights, the ships can fly directly to the underground lake where we might bivouac and assemble for the attack. We must first move upon the warriors in the crater and rescue the poor unfortunate men in slavery there. Utmost care must be taken, else they will be killed outright to prevent their return to us."

Admiral Haight nodded.

"Then, gentlemen," he said, standing up, "if the Subterraneans want war, we will carry it to them at once. Take whatever men you need, Mr. Allen, and go ashore immediately to prepare the entrance into the Subterranea!"

"Yes, sir!" Bob saluted stiffly. "I can do it alone, sir, and if I may, I would appreciate entering with the first plane."

"Granted!" said the admiral. "Report to Commander Jones on the *Langley* after you've opened the wall. He will equip you with what you need!"

"Aye, aye, sir!" said Bob, his eyes flashing.

Immediately he hurried out. The conference ended. Crisp orders flew across steel decks and rang through the ships. Britt caught Bob boarding a small launch and went ashore with him. Grimly and with determination they clutched their ray guns.

Before they reached the rock-clad beach, flood lights were swung into small boats and they started shoreward. Bob and Britt leaped ashore the moment the launch reached it, and without hesitation they waved the marine outpost out of danger and turned their powerful taas rays on the wall. Sparks flew. Marines and officers looked on in awe. The hole they had already made grew larger. Molten rock splattered down like flaming lava. The ray-guns went through the wall like a monstrous acetylene torch in action on steel. An hour of steady work brought the hole to mammoth size. Yet they continued stabbing at it with their rays, making it still larger.

Satisfied at length that the opening would admit at least two planes flying abreast, Bob shut off his taas tube. Britt did likewise and they stood gaping at the hole while the rock about it cooled. After a few moments, Bob snapped out an order to the marines, who had landed with their floodlights. They scrambled into the opening like monkeys, dwarfed by its great size, dragging powerful lights into it. In no time they had them at work, illuminating the dark cavern with a steady flood of light, the power being generated on board the *Virginia* and carried ashore by cables.

A battery of great sun-arcs were put into action just inside the opening. Their powerful beams penetrated the blackness above the cascade in brilliant streams of light. The roaring subterranean river seemed alive. It glistened under the violet light of the floods—and arcs—like a river of diamonds and fire-flecked rubies.

Large, grotesque creatures, frightened by the sudden stream of light, darted through the air in swarms. Great vampire bats with the wing-spread of an eagle flapped dismally in erratic flight across the beams in seach of a dark corner in which to hide. Flying reptiles rose off the rocky shelves and glided into the cascade. Schools of silver salmon and tri-colored trout rose up from the water in great leaps as if to investigate the strange light that illuminated their Stygian domain. They flashed like fire as they shot from the water and dropped back again.

Quickly Bob and Britt boarded the launch and were transported to the *Langley* where Commander Jones, forewarned of their coming, met them at the gangway. On deck, tugging at their blocks, was a squadron of trim fighting planes warming up. Bob and Britt were awestruck by the fact that the planes seemed made of yellow gold, from landing gear to tail-skids, ailerons to propeller-tips and from laterals to the very muzzles of their evil-looking machine-guns. Even the pilots who loafed near their ships eager to be off, were of gold. They had the aspect of golden statues brought to life by a strange process of animation. From helmet to toe they were garbed in golden garments that, like the ships, blazed brilliant in the sunlight. On their hands they wore golden gloves. Face protectors, such as were worn by the gallant knights of Merrie Olde Englande, were shoved back on their heads. These like everything else they wore, were gold-coated!

Bob Allen felt a sinking sensation in the bit of his stomach when he saw them and realized that he alone was responsible for the golden squadron. What if he had made a terrible mistake in his conclusion that gold alone was immune to the dread rays of the Subterraneans? Supposing they possessed rays even more deadly than the ones he had used in his hurried experiment on the cabin boy's gold ring? He asked himself those questions silently, feeling like an executioner, who was about to put his best friends to death. Britt's hard voice jarred him out of the thought.

"The golden squadron!" he exclaimed. "Lord! They must have used up all the gold in the country to rig it up!"

Commander Jones chuckled beside him.

"Not at all, Britt," he said quietly. "The gold was put on like lacquer, thanks to the Bureau of Standards. They're a smart outfit, there! They recently discovered how to make synthetic gold and to liquify it so that it would harden into a thin plate when spread like paint, but being very pliable. They put it to use here, even to the bullets. Every plane on board the *Langley* has been plated with gold and we've equipment for every single man. But are you ready to take off, gentlemen?"

"Immediately!" said Britt. "With the Admiral's compliments, Allen is to go in the first plane. I'll follow in the next. We'll guide the others. Now for our golden armor, Commander!"

At Commander Jones' orders, they were outfitted immediately. As he donned his golden monkey-suit, Bob wondered if the synthetic metal would prove to be as immune to the Subterranean taas rays as the thick gold ring on which he had experimented. Would it turn the rays aside as the ring had done? Or would it crumple up and vanish in a puff of smoke as the Inner World airmen had crumpled when Britt had let loose their own deadly rays upon them near the lake?

"Let's go, Allen!" Britt urged him suddenly.

Dumbly, but without hesitation, Bob strode beside him toward the waiting ships. Pausing near the point-ship of the golden squadron, they shook hands.

"Good luck, Allen!" said Britt, a grim smile on his hard-bitten face. "See you in hell!"

"Same to you, Commander!" replied Bob. "Got your radium-ray gun??"

Britt pulled his taas tube from a leg-pocket and held it up.

"Good!" Bob added. "You'll need it!"

Thereupon he turned to his pilot, a youngster whose flashing gray eyes displayed his fearlessness; whose smile betrayed his eagerness.

"Allen is my name," Bob introduced himself. The pilot extended a golden hand.

"Already heard of you, Lieutenant," he said in a cheery voice. "Mine Watson—Lieutenant Watson. Mighty glad to have you with me, sir! You've been up before, of course."

Bob nodded.

"Registered pilot, Watson!" he volunteered. "Flown a lot. Let's go!"

"Ready!" said Watson, climbing into his cockpit. "Studied that hole you made in the wall very carefully through glasses. But after I get in, what's the course?"

"Straight ahead!" said Bob, scrambling into the observer's cockpit. "Don't worry! Once you clear the hole, the rest will be easy! That cavern inside will handle a dozen ships abreast. We'll be at the lake before you know it!"

Watson settled down into his seat, raced his motor and waited for the signal to take off. Behind his ship the others tugged at their blocks. Far astern a great transport plane was being brought up on an elevator. Its propellers were spun the moment the lift stopped. Golden-garbed marines, equipped for action with gleaming yellow rifles and machine-guns, boarded immediately. Then came the signal for the take-off.

The blocks were yanked from the gear instantly by nimble-footed gobs. Watson roared his motor and sent his plane off the landing and into the air. Bob's heart pounded at the thought that once more he was to enter the world of the living dead. Would he ever find Patti? he wondered, as Watson swung his plane in a circle, waiting for his squadron to fall in behind him.

Over the cockpit, Bob saw a string of ships dart into the air from the *Langley*. Big transports followed, their motors roaring out in defiance to the Subterraneans. Ships darted off the landing like flies. Fast pursuits! Lumbering, but fast transports and bomb-laden bombers The air suddenly seemed filled with thunder and racing aircraft.

Suddenly Watson wiggled his wings and pointed his ship toward shore. Grimly Bob sat hunched, low-down in his cockpit, trusting to luck and the hand of Providence to guide the ships safely through the hole. It was a risky, dangerous undertaking, diving through that hole, and he knew it perhaps better than the determined pilots.

Like a starving cormorant diving out of the sky at a school of herring, Lieutenant Watson's ship hurtled unerringly at the hole in the wall. Bob saw the marine outpost on the shore below duck suddenly behind rocks as if for protection against flying missiles should the trim ship fail to negotiate the hole and smash into the wall. But despite his youth, Watson had been flying too long to miss his mark.

He sent his ship through the opening with a roar. Into the cavern, scarcely fifty feet above the roaring cascade, he shot. The full-throated roar of the motor was drowned by the tumult created by the stream. But the cavern was illuminated as bright as day. They saw the roof high overhead. The forbidding walls studded with projecting rocks and shelves, loomed off sides at a safe distance. Great bats scuttled a-wing to get out of the way of the golden demon. Straight as an arrow, Watson hurtled his ship through the subterranean gorge. Its golden wings glittered in the brilliant light of the sun-arcs. It was like a great bird bearing a charmed life as it swept on. Bob prayed silently that it and the others following would clear the gorge safely.

While they swept on, the two troop ships escorted by destroyers, dropped anchor in the vicinity of the cruisers outside. Golden-garbed soldiers swarmed their decks and rails, eager for action. The hospital ship *Mercy* drew up, ready to be of assistance if needed. Almost in her wake came another aircraft carrier, the *Armstrong*, yellow-glistening planes grounded on her great landing deck.

But before Bob realized it, Lieutenant Watson sent his ship out of the gorge and into the blue air above the lake. Fearing that in his excitement Watson might fly too high and crash his ship against the blue roof of the great earth-bubble into which they had come, Bob gave him directions. Watson shook his head, circled over the lake and looked for a landing.

"No landing here, Watson!" Bob yelled at him through his speaking tube. "If we land on the beach we'll be grounded by the sand! We've got to go on to the crater!"

He looked toward the mouth of the gorge. Ships were spewing from it in rapid succession. In a few brief moments the golden squadron cleared it and was hovering above the lake.

"Give 'em a signal and let's go!" he cried to his pilot. "Head for that rise on the horizon, but keep low! The crater is just beyond the rise!"

With a roar the plane shot through the blue air toward the distant rise over which Britt had dropped his first Supterraneans. The squadron fell-in behind in attack formation, while the transports and bombers took up the rear. The tumult they created thundered hollowly through the Subterranea and Bob hadn't a single doubt in his mind but that their presence was already known to the Subterraneans in the crater, though he hoped that the distance was too great for them to hear the motors and propellers.

But what he hoped for was far out of accord with the grim realities, for suddenly over the distant rise hurtled a Subterranean flyer such as he had seen the day he was taken captive. The flier had the appearance of a monster cigar, studdied with spikes. From the bottom and tail shot jets of blue gas. It came forward in a flash, like a sky-rocket, its gas exhausts hissing like snakes.

As it came on, Bob noticed that it had an observation port directly above its nose. He recognized it as of the same transparent metal that composed the grub-platters in the slaves' barracks in the crater. The golden squadron under Watson's leadership sped on toward it.

There was no wavering aside from the established course, though every pilot and observer knew at a glance that an enemy barred their way, was coming on to engage them. Bob sensed the brewing of a battle. He clutched his taas tube in a tight grip, waiting for his ship to approach to the flyer before projecting a disintegration-ray at it.

He knew there would be no taking of the crater without a savage fight. Only a surprise attack might save the unfortunate slaves from certain annihilation at the ray-guns of their captors. He was elated to see that the flyer was alone, that no others seemed to have followed it into the air. Perhaps, he guessed, this one had merely gone aloft to investigate the strange, hollow roar of the motors that doubtless had been heard in the crater.

Suddenly Watson let go of his joy-stick and gripped his Vickers. Instantly his eyes were glued to the ring-sights of the twin guns, his hands on the trips. Bob was startled by the sudden tack-tack-tack-tack of the guns as they sent golden slugs at the oncoming flier. He saw them strike the strange air-ship, exploding as they hit. But they might as well have been sent against the armored side of a battle-cruiser.

"That's an all-metal flyer, Watson!" Bob cried at his pilot. "You can't down it that way! Watch this!"

Bob snapped up his taas tube and took careful aim. But before he could press the controlling buttons releasing the rays, a half-dozen blue beams shot suddenly from the flyer. He heard them hissing forth and flinched, expecting to be disintegrated on the spot.

A beam struck his ship squarely at the propeller-shaft. The motor missed fire, coughed fiercely and picked up again into a throaty roar. The heat of the dread Subterranean ray seared through his golden garments and made his hair tingle at the roots. But the ray had not destroyed him! The ship still remained in the air!

Speechless at the fact that he had survived the terrible ray that under ordinary circumstances would have sent the ship up in a puff of blue smoke or stripped the flesh from his bones, Allan was gaping at the flyer. Ray after ray stabbed it. Each time, a ship was struck, causing no more damage than a momentarily missing motor!

It dawned upon him suddenly that gold after all was immune to the Subterranean rays. He gave a shout of joy and yelled through his speaker to Watson.

"We've got 'em, Watson!" he screamed like a madman. "We've got 'em where we want 'em! They can't hurt us now! The sculpins! We're immune to their rays, so long as we are protected by golden shielding!"

Watson said nothing, but quietly tripped his Vickers again. The improved Vickers were indeed deadly guns. Since the World War they had been made more murderous, larger of calibre, their bullets containing charges of ultra-high explosives. But they seemed to have no more effect upon the flyer than a child's popgun on an elephant. This fact startled the grim-faced flyers of the golden squadron. They roared around the flyer like bees, guns vomiting what on the Surface would have been death. They despaired of their efforts to down the strange ship until a ray suddenly hissed from Bob's taas tube.

It struck the flyer squarely on the side. The pilots and observers saw to their amazement that the ship had been cut in two. Like plummets the fragments fell, leaving a puff of blue smoke in the air behind them. They yelled at the unexpected victory over the invincible and followed the flight-leader's ship joyously.

Over the rise the golden squadron hurtled. Far below, Bob sighted the great crater. Scores of Subterranean warriors leaped into the air to meet them, unsuspecting that they were to go down in death in hails of golden bullets. They rose upward like so many strange birds.

Their appearance made Bob think of his own flying device which Larkin had given him. He had left it back in Britt's cave hideout and had not returned for it. He shrugged his shoulders and told himself he would get another if he needed it. He realized that flight under one of them would be extremely dangerous in so far as a radium-ray could destroy it.

Watson suddenly wiggled his wings and dove into the crater, his guns spittting golden slugs. Bob watched for the effect in breathless silence, wondering if they would penetrate the mysterious lead and steel-shattering radium-armor the creatures wore. The air became rent with the throb of motors and machine guns. Bob saw, roughly guessing, a score or more Subterranean warriors go suddenly limp in the air. He saw ray guns drop from nerveless hands and knew that the golden bullets had struck home.

For an instant he watched the dead warriors in the air. Death had overtaken them before they could turn off their individual flying devices. The fliers attached to their broad, grotesque shoulders continued in operation. The dead creatures, unable to guide themselves through the air, were lifted by their whirling propellers swiftly upward. Through his glasses, Bob watched them rise until they collided with the roof high up. There they hung in death, their bodies ripped horribly by the explosive slugs from the straight-shooting pilots and observers of the golden squadron.

At the bottom of the crater, chaos reigned. Animated human skeletons ran hither and yon in wild abandon and disorder. Bob saw them through his glasses, hoping for a glimpse of Dr. Marsden. At the moment he thought he saw the scientist crouched behind a radium-extracting machine, Watson hurtled his ship upward again. He circled quickly and dove down under the remaining Subterraneans who were desperately projecting their rays at the strange golden birds that had so suddenly and unexpectedly swooped down upon them. His Vickers clattered loudly. A sizzling ray hissed off his left wing as a bullet might ricochet. Bob howled with glee when he saw Inner World warriors go suddenly limp or blown apart by the explosive golden missiles.

He turned his glasses once more on the crater bottom. From out of the tunnels and corridors shot hundreds of warriors who fell an easy prey of the golden birds. They emerged into the open only to be greeted by hails of death, that snarled down upon them from above.

Once more Bob caught sight of the crouching figure behind the taas extractor. There were several men crouched there now and they were not animated skeletons. They were members of his own crew who had not yet been affected by the strange forces of the radium, which made human flesh invisible after a time. And Dr. Marsden, his white hair visible, was among them.

Bob Allen, for the first time in days, weeks, felt a sensation of real joy surge through him. But it was

short-lived, for suddenly from one of the corridors darted a number of Subterraneans. They emerged afoot, shooting their rays at the helpless slaves. Bob's blood turned suddenly cold as he realized that the warriors were bent on destroying their captives rather than permitting them to return to their own people.

"Watson!" he yelled to his pilot. "Dive into the crater! Quick! They're going to exterminate my friends—our friends! Down!"

Lieutenant Watson, his eyes flashing behind his face protector, with the sheer joy of action and excitement, needed no further urging. He sent his ship into a power dive. Bob clutched his taas tube, but feared to unlimber a ray lest he should strike down some of his own friends.

Skeletons raced away as if to escape the warriors. Rays hounded them, here and there sending up puffs of blue smoke and dust. Then Bob recognized his chance. The warriors, in a group, reached the center of the crater bottom. The slaves cringed away from them at a distance. Bob fingered the buttons on his taas gun. Instantly a blue ray sizzled forth from the muzzle.

The warriors stopped dead in their tracks. When the smoke and dust cleared, they were gone! A big subterranean ship darted at that moment from a corridor. It got no further than the middle of the abyss. As his golden plane swooped over, Bob projected a disintegration-ray. The flyer crashed down, split from end to end.

Another appeared as Watson cleared the crater-rim. Britt saw it from his cockpit in the plane following. He gave a shout as he unloosed a blue beam at the thing and saw it sliced in half as if a mighty, invisible axe had been swung on it. He screamed in glee, his excitement taking control of him.

Then, as if he had ordered his pilot to land, his ship darted deep into the crater. Bob saw it go as Watson zoomed over and levelled out. He knew at a glance that Britt was going to land on the bottom. There was plenty of room there, space for the entire squadron to land. But there would be difficulty in taking off again. He realized a take-off would have to be made at a sharp upward rush in order to clear the crater rim.

"Good old Britt!" he told himself, motioning Watson into the abyss. "He must think that the only hole you can't get out of is the one they bury you in! Let's go, Watson!"

Lieutenant Watson dove into the crater again as Britt's ship levelled out on the bottom and sent up a cloud of dust as its tail-skid took hold. Quickly Bob felt his landing gear touch the glowing ground. Watson taxied the ship up beside Britt's. Together they leaped out. The crater seemed deserted except for animated human skeletons. No warriors were in sight and Bob concluded, as he ran toward the taas extractor, behind which he had seen Dr. Marsden crouching, that they had retreated with terrible losses.

Lieutenant Watson followed close at his heels, having left the propeller of his ship idling. But before they could go far, they were surrounded by skeletons, shouting like madmen. Watson cringed from them, not knowing that they were living men whose flesh had been made invisible by the radium they had handled for so many years. He thought they were ghosts and he cringed from them in unutterable horror.

"Dr. Marsden! Larkin!" Bob called loudly. At the sound of his voice the excited babbling of the skeletons subsided and ceased. "Where's Larkin?" Bob cried at them.

"Here's Larkin!" a big-boned skeleton shoved his way through the mob. "Larkin's right here! Coming!"

He stepped up, his bony hands trembling. Bob grasped him by the arm and shook him.

"We've got 'em, Larkin!" he cried. "We've licked 'em at their own game!"

Skipper Allen!" Larkin exploded. "Say! You got out, didn't you?"

"Surest thing you know, Larkin!" breathed Bob. "We got out—Commander Britt and me, and got help! There's a fleet of warships outside right now!"

"We thought you got killed on the rim!" said Larkin, amazed. "Britt, did you say?"

"Your commander!" said Bob. "He landed in the first plane! Don't you remember him?"

Larkin stroked his broad chin with a shaking, skeleton hand.

"He wasn't killed then after he escaped from the crater?" he asked.

"No!" said Bob. "Better go look for him! He's around here somewhere! Now where's Dr. Marsden?"

"Here I am, Bob!" Dr. Marsden, stripped to the waist and looking very old, shouldered through the crowd.

"Open up for him, boys!" Bob snapped. "Snap out of it!"

"Bob!" the scientist's voice was weak and broken. He broke through the mob. "Thank God! You've brought help."

He stumbled forward weakly and would have fallen forward on his face had Bob not caught him in time.

CHAPTER XIV

BOB ALLEN might have been acclaimed a prodigal son judging by the way Dr. Marsden embraced him. The scientist, broken in spirit and health, fell into his arms, trembling and sobbing. In a short time, years seemed to have been added to his age. He sobbed chokingly, grief-stricken.

"Oh, Bob!" he choked. "You've come back!"

"Brace up, Doctor!" soothed Bob. "Get courage! You'll need it more than ever now! The fight's just begun!"

Commander Britt forced his way through the crowd of skeletons and men. His former crew of the *Cyclops* recognized him at once and flocked to him. But he was appalled by their skeletonized appearance, though he had learned previously from Bob just what he would find in the crater if he ever returned to it.

The golden squadron came down to a landing. The transports spewed forth their cargoes of golden-garbed marines. Outposts were established immediately. Guards were placed at the corridors and any hiding Subterraneans were dealt with quietly and quickly. Golden bayonets became stained with blue blood when hard-faced marines smoked out a half dozen warriors from an obscure corner in a tunnel. It had, perforce, to be done. The gory-eyed soldiers of the sea had no compunction about running them through. It was like stamping out vermin, as one grimly remarked to another. The mopping-up of the crater became a game, in which every golden-garbed participant delighted.

"But they will certainly kill Patti now!" Dr. Marsden sobbed feebly. "They'll kill her out of spite for what you have done here!"

Bob Allen grasped him by the shoulders and shook him like a rat, losing all control of himself at the mention of Patti's name. Dr. Marsden looked at him in sudden alarm.

"Where is she, Marsden?" Bob demanded fiercely. "Tell me!"

Dr. Marsden's pale lips trembled. He pointed a shaking finger in the direction of the corridors.

"She's at the Queen's palace deep inside the earth, Bob," he choked. "She was taken captive the same time we were. But they took her to the interior—the City of the Queen!"

"How do you know?" Bob spat in uncontrollable wrath.

"Norton told me——"

"Norton?" Bob's voice had the edge of a dagger.

"Yes," replied the scientist. "He sold out to the Subterraneans, bag and baggage, and came here one day with some warriors who wanted to take you before the Queen for some reason. He told me Patti was at the Queen's palace and must do his bidding or I would suffer for her stubbornness!"

"He told you that?" snarled Bob furiously.

"He did, Bob, with God as my witness!" groaned Dr. Marsden. "He had me put to work on the ore-dumps. The labor was killing me! I'm not strong enough——"

"The dog!" rasped Bob through clenched teeth. "The dirty dog! And he's got Patti where she can't defend herself!"

"I never suspected him of being such a scoundrel," gasped Dr. Marsden. "He is trying to force Patti to submit to his advances by using me as a club over her head, knowing that she will do anything to save me from harm. Oh, he's rotten to the core, Bob! Had I known that beneath the skin he is a treacherous cur, I'd have killed him that evening he shot at you in the pilot house!"

"And if she submits?" Bob's eyes flashed like those of a cornered beast.

"Then I was to be given lenience," said Dr. Marsden, betraying his utter helplessness. "If she refused, I was to be tortured to death with work. Norton was so cocky and seemed certain that we'd never get out of here alive and that his crimes would never reach the Surface!"

"How long ago was he here?" asked Bob, fuming.

"I think it was the very next day, or its equivalent in this un-Godly place!"

Bob groaned. Many things could have happened in the City of the Queen since his departure from the crater. He gazed stolidly at the scientist like a man of stone, an inanimate thing without the power of comprehension. Then with uncontrollable fury, he changed from a man of rock to a livid, quivering demon. A burning fire seemed to have kindled suddenly within him and had begun to burn him up. A vision of Norton's image conjured itself in his whirling brain. Then he imagined he saw Patti cringing desperately from the man. He opened his mouth, but no words issued from his pale lips. Then with a beast-like snarl he twisted his taas tube as if choking the neck of the man he hated, a man who had become a monstrous creature degenerated by his own vileness.

Livid of face, his rage beyond control, he swung on Lieutenant Watson.

"Watson!" he snarled savagely, a note of sheer desperation in his voice. "I'm taking your ship into the interior! Make arrangements with the transports to have these poor devils transferred abroad the hospital ship! You can return to the *Langley* for another plane!"

"I'd rather go with you, sir," said Lieutenant Watson with disappointment. "I'd much prefer——"

"Sorry, Watson" snapped Bob. "But I'm taking Larkin with me!"

He glanced quickly over the crowd and saw Commander Britt talking earnestly with members of his skeletonized crew.

"Britt! Larkin!" he called loudly.

Britt and Larkin elbowed their way to him.

"Larkin," Bob growled. "You told me once you had visited the City of the Queen. Do you know where it is and how to get there?"

Larkin clicked his bony jaws together. He turned his grisly skull to look at Britt. The commander regarded him expectantly.

"We were taken there years ago," said Larkin in a puzzled tone. "I think I can find it. The first corridor to the left runs straight down to the City of the Queen. Why, Lieutenant?"

"Because I'm going there right away!" Bob cried fiercely. "And if you're not yellow, you'll go with me!"

Larkin's jaws clicked.

"Nobody ever called me yellow, Allen!" he rasped. "I've been itchin' to sink my fingers in that wench's neck! Let's go, skipper!"

Dr. Marsden grasped Bob's arm with trembling hands.

"But you can't go there, alone, Bob!" he warned. "Why, they'll kill you! You haven't a chance!"

Bob shook himself free.

"I know it, Marsden!" he growled. "But I'm going anyway! I've got to find Norton! And if I do——"

He clenched his firsts in significance as Britt climbed suddenly up on one of the taas extracting machines. His deep voice boomed out for silence and then he began addressing the golden-garbed pilots who had come forward to see the animated skeletons.

"Boys," he boomed excitedly. "Lieutenant Allen is going into the interior! His flight will take him to the Palace of the Subterranea. It is a dangerous mission, one from which he may never return. But we've won our fight here and the Queen's palace is the next place to strike! If Bob Allen goes there, I'm going with him! Any volunteers to help us along?"

The crater rang with eager voices. Watson hung about Bob in utter disappointment. Dr. Marsden shook his head sadly, realizing that further protests would prove futile. But deep down in his heart he felt grateful to Bob Allen, who, he knew, would sacrifice everything to help Patti out of her dire predicament and square accounts with Captain Norton. He faced Bob once more. His eyes glistened with tears.

"God watch over you, son!" he choked.

"Thanks, Dr. Marsden," said Bob quietly, grasping his trembling hand. "Don't worry! If I don't return, just tell my folks that I went out like a man and an officer. They'll understand!"

Britt's voice attracted his attention. Dr. Marsden, ambled away to be alone with his grief and sorrow.

"Get your ships ready, boys!" the commander urged. "We'll take the Golden Squadron into hell and come back with flying colors! Ready Allen?" Bob waved his taas tube at him, nodding. "Then let's get going!" concluded Britt, leaping down from his perch and pushing his way through the crowd toward his waiting ship.

Bob and Larkin fell in beside him. The pilots followed quickly.

"I'll lead the squadron, Britt," said Bob determinedly. "Larkin can guide me!"

Britt nodded.

"Okay with me, Lieutenant," he said. "You forget that I've been at the City of the Queen. But I'll follow you up in second position!"

"If you'll pardon me, Commander Britt," put in Larkin hesitantly. "I'd advise that you equip the pilots and obervers with taas tubes! If the Subterraneans haven't destroyed them, there ought to be enough of them in their arsenal here to go around!"

"Brilliant idea, Larkin!" commented Britt, grinning. He gave the ex-engineer of the *Cyclops* a warm thump on the back. "Go get them at once!"

"Aye, aye, sir!" Larkin saluted with his bony right arm and sped away like a skeleton that had crept from its grave and had taken to its heels.

Within a few moments he returned, his arms loaded down with taas guns which he dumped at Britt's feet.

"There they are, sir!" he said, breathing hard.

"Great stuff!" replied Britt. "Now help me distribute 'em! Come on, Allen!"

Quickly they picked up the ray guns and hurried to the waiting ships. To each pilot and observer they handed a tube and gave instruction as to its operation. Within a short time every man of the Golden Squadron was silently and admiringly contemplating his new weapon. Then a sudden, deep-throated roar of Bob's motor informed them that the flight was about to take off. They raced their engines as Bob, with Larkin in the observer's cockpit, sped his golden ship across the crater bottom. Britt followed and went into the air almost on its tail.

Like homing pigeons they flew straight for the opening of a great corridor hewn in the earth to which Larkin had directed his pilot. Fearlessly Bob hurtled his ship into it, already aware that the interior would be well illuminated by the peculiar blue glow of the Subterranea. He looked back over his shoulder. Britt and his pilot were close behind. In their rear came the Golden Squadron, hurtling forward like glistening, yellow birds of prey.

Over the edge of his cockpit he saw Larkin's grisly skull and shoulders rising above the fusilage. His blood suddenly ran cold. He had forgotten to equip the engineer with a gold monkey suit! The man sat in his seat unconcerned about the danger of flight through the winding corridor, unaware, it seemed, that he was in no measure protected from the terrible taas rays of the Subterraneans. Bob realized that he would be exterminated in his seat should a ray strike him or the plane. But it was too late now to equip him. He gave a silent prayer that he might come out of any skirmishes unscathed.

But he attracted his attention presently and pointed to his earphones. Larkin searched his cockpit for a pair, found them and placed them over his ears. Bob grinned grimly at the sight of him sitting there, a human skeleton with earphones over his fleshless skull!

"You're in a hell of a fix, Larkin!" Bob told him bluntly. "We forget to rig you out in a gold uniform! Gold is immune to the radium rays. But you're not! You'd better duck way down if we meet any Subterranean flyers."

Larkin was stricken dumb for a moment. He stared at Bob for a brief moment and then found his voice. He yelled into his speaking tube.

"Okay, skipper!" he said with a snap of his jaws. "I never expected to get out alive, anyway!"

He turned his head and Bob heard him laughing insanely.

The laugh haunted him for the next few moments. He wondered how Larkin could be amused in the face of certain death. Then he realized that the powerful effects of the radium to which he had been subjected for so many years, must have begun attacking his brain. He flinched at the thought that he may be the companion of an insane man. He shook off the tingling sensation that swept over him with the idea, and concentrated on his controls.

He sent his ship hurtling through the glowing corridor at a speedy clip. On all sides of him loomed blue-glowing walls, but they were at a safe distance. There was ample room for flying ships there, room enough, he calculated, for a half dozen planes to fly abreast. But the sharp turns annoyed him. The air in the corridor seemed scarcely heavy enough to hold up his plane. At a result it side-slipped crazily on the turns which at times were almost too abrupt to be negotiated. Each time he cleared one, he marvelled at his own capacity for flying, or thanked Providence that he had come through unscathed.

The turns soon became so numerous that he could give no further attention to the squadron of gold ships behind him. With every nerve taut, he maneuvered his craft forward, wondering how much further the Inner World proper could be.

As he continued on, he wondered why they had encountered no Subterranean flyers. Had the attack on the crater wiped out all the warriors stationed there? What if a squadron of Subterranean ships should suddenly appear in the corridor ahead? He shuddered, visualizing instant disaster to himself and those following him. A collision would be inevitable.

The tunnel took a sudden dip downward at an angle. Strangely his motor began to labor as if pulling his ship into an ascent. He gave it the gun and it picked up for a moment, then began laboring again.

Sweat stood out on his face as he realized the motor might conk and die at any moment. He pondered over the strange situation. The plane was hurtling down into the earth's interior, yet the motor was laboring. A stretch of straightaway opened up before him, with no curve in the blue haze.

He glanced quickly over his shoulder. Britt's ship had fallen back and was now about a hundred yards in the rear. The pilot was fighting desperately to keep his motor going by hedge-hopping his plane.

Wondering at the phenomenon and what it was all about, he too began hedge-hopping his plane up and down. The volplaning seemed to keep the motor going as each time he dipped, it picked up speed. Through his earphones came Larkin's tense voice. It startled him.

"You're bucking gravity, skipper!" Larkin advised. "It's like rising into the air on the surface. Down here it is the same. The interior is a hollow shell. The gravitational influence lies in the earth crust that separates the Surface from the Subterranea. That's one of many things I learned down here, skipper!"

"So that's it, eh?" Bob grunted. "I suspected something like that, especially about bucking gravity. But how far must we go?"

"Couple of miles more!" replied Larkin. "The earth's crust is thirty miles thick. The crater is about eighteen miles below the Surface. It's about twelve miles from the crater bottom to the City of the Queen. This tunnel opens out within a stone's throw of the palace grounds."

"Plenty of room to fly in down there?" asked Bob ironically.

"Just like taking off from the Surface!" said Larkin. "Plenty of room. But if my advice means anything, sir, I'd land in this tunnel within sight of the outlet. Then you can taxi right ahead to the palace grounds. It'll be safer!"

"Yeah?" Bob arched his brows. "That's great, Larkin! Do you think the Subterraneans expect us to raid the palace?"

"That's problematical," replied Larkin calmly. "The marines sure played hell with the Subterraneans at the crater. I don't believe a single one of them got away to warn the Inner World. But I couldn't say, for sure. I was too busy trying to save my neck to keep tab on the dirty murderers!"

"We'll trust to luck!" grunted Bob.

He glanced observantly at the dashboard in front of him. He had taken particular notice of the mileage on the speedometer as he left the crater bottom. According to his reading of the gauge now, he had but a mile to go before reaching the exit of the corridor. He tightened his lips and spoke into his mouthpiece.

"Another mile to go, Larkin!" he barked savagely.

"Good!" responded Larkin, fatally. I'm about convinced that we'll not encounter any Subterraneans between here and the palace. But better be careful!"

Bob said nothing. He gripped his controls with firm, steady hands. Beside him on his seat lay his taas tube. It was within easy reach should he need it to blast away any opposition to his advance. But Larkin was ready for that task. He was the personification of alertness as he stared fixedly ahead, his taas gun ready.

The motor kicked and missed time and again, but with added acceleration and continued hedge-hopping, it was kept going. Bob was glad the corridor was not steeper. At a sharper grade he might not have been able to keep his motor going.

Suddenly Larkin sat bolt upright in his seat and yelled.

"The corridor ends dead ahead, skipper!" he cried into his speaking tube. "Better land, sir!"

Instantly Bob wiggled his wings as a signal to the planes behind him. The wings on Britt's ship wiggled to the plane following and the landing signal was quickly relayed to those in the rear. Bob idled his conking motor and slowed down with alarming abruptness as a plane might do in a sharp ascent with the motor going suddenly dead.

The plane side-slipped ominously, narrowly missed a wall, and threatened to turn over in a spin. But he expertly maneuvered it to even keel, then dropped to a rough landing. He breathed a sigh of relief as the wheels touched the gritty floor of the corridor. Quickly he taxied forward toward the exit which loomed before him.

Behind him, one after another, like ducks flying and landing in straight formation, the others dropped down and grounded. The corridor thundered with the drone of the powerful wasp motors. Then with an eagerness borne of his love for Patti Marsden and his desire to help her, he sent his plane taxying through the corridor exit, Larkin crouching low and helplessly in his cockpit. Before him opened a weird world.

CHAPTER XV

BUT while Bob Allen and the Golden Squadron were getting their first glimpse of the Inner World, feverish activity was taking place on the rock-clad shore at the mouth of the cascade. There, golden-garbed troops were assembling from the troop ships that were rapidly gathering offshore. Defense of the North and South American Continents had begun in earnest. In single file, a golden-garbed army of carefree Yanks marched into the Subterranea along the narrow trail running beside the cascade. To some of them, the whole thing was a lark, a strange adventure into which they went, eager to meet the mysterious enemy. But to others, those who had served overseas in the World War, at Chateau Thierry, St. Mihiel, Vimy Ridge, Verdun and in Flanders, it was a different matter. They had tasted war in all its horrible realities and had found it bitter. But they moved up with the raw rookies to fight for humanity's cause.

The Surface world was in a fever heat over the mysterious message that had been picked up at Newport News from Commander Britt far under the earth. Word spread over the world like wildfire that the Surface was to be attacked by a race of peoples living in the Interior. Scientists painted vivid word-pictures for the press and the radio, saying what, in their opinion, the Subterraneans might look like.

Frightened mothers clutched the young ones close to their heaving breasts. Recruiting stations were opened almost overnight in every town and hamlet of the United States. Other nations followed suit. Into them filed the youth of the world. Out they came, enlisted men.

Enlistment for service in the World War was mild compared to the unprecedented rush. In a week's time the American Army grew from a few thousand regulars to five millions. Abroad the situation was no different. China and Japan settled their difficulties and joined forces to fight for a common cause. A greater, more deadly enemy threatened momentarily to pop out of the ground and exterminate them with deadly guns, that projected radium rays which stripped the flesh from the bones or destroyed altogether in puffs of blue smoke.

Life on the Surface was in unspeakable danger. Humanity was to be wiped out by the mysterious Subterraneans whose presence in their world in the earth's deep interior had never been suspected, or even dreamed of, until the grim message from the lost yacht, *Scienta*, was picked up by the excited radio operator at Newport News. Despite the fact that he came well-nigh to destroying humanity, because he had thought the message to be a hoax, he was acclaimed a hero the world over. His fame spread, but no greater was it than that ac-

corded Commander Thomas Britt and Lieutenant Bob Allen.

Upon receipt of word from the front that the enemy had been met and the synthetic gold had withstood the test of the Subterraneans' terrible taas rays, the Bureau of Standards turned its formulae for making the yellow metal, over to big production plants. Production of synthetic gold began feverishly.

Differing from ship-building activities so feverish during the World War, the government went in for wholesale production of gold-plated aircraft. No decisive battles would be fought on the sea. It would be in the air—deep down in the bowels of the earth, for it was determined that the Subterraneans would be engaged and vanquished right in their own domain.

Night and day troops marched single file into the Subterranea. Bases were established at the lake. Transport planes carrying marines and officers to the very front, disembarked on the crater-bottom. Guns, gold-covered, were floated down the boiling cascade to the lake where they were salvaged and hauled ashore. Trucks and tanks, glittering with their yellow coats, were likewise sent up. Roads were cut through the brittle vegetation.

Troops went to the crater in trucks and bivouacked there for orders. Airbases were established. Squadrons of aircraft were brought up. A golden-garbed horde swept into the Subterranea. Humanity was taking no chances of being exterminated on the Surface. It was the grim resolve that if it were to be destroyed, it would have to be in the Subterranea. Humanity would fight to the last man!

Acting on the flat statement that the Subterraneans had made a tunnel by which they intended to attack Berlin, shrewd Germany decided to beat them at their own game. In the heart of the city they began excavating. Thousands of men and machines got busy and sank a great well into the earth. Scientists, by tapping the earth in some mysterious manner, had found a spot in the center of Berlin which sounded hollow, betraying the location of the Subterranean shaft. There they worked.

London followed the same course, as did Tokio, Moscow and other great cities in line of the reported Subterranean attack. Such action was not required in the United States due to the fact that Bob Allen and Tom Britt had found a way to admit fighting men into the interior through the great hole they had made in the rocky slope of Mt. Pelee. Other governments found it more convenient for them to sink great shafts down to meet the Subterranean tunnels. To cross an ocean takes time, why not utilize that time in a more satisfactory way? was their motto, it seemed.

But such was the furore Bob Allen and Tom Britt's radio messages to Newport News created. Britt's grim experiences told at the conference of high naval officers on board the Flagship *Wyoming*, were broadcast to the world uncensored. His story was compared with the one related by Bob Allen, by shrewd War Department officials and scientists. But the Subterranean menace had been met by others and there was no need for cold substantiation of the harrowing tales.

Bob Allen and Tom Britt did not know that they had become world-wide heroes overnight when they sent their gold-plated planes out of the corridor and into the weird Inner World. Nor had they time to speculate on the possibilities of fame as a result of their parts already played in warning the world of its impending catastrophe. They had played their parts without thought of fame or reward. It had been done for a common cause to save their own lives as well as those of others.

Patti Marsden was the uppermost object in Bob Allen's mind as he taxied his ship out of the corridor and over the palace grounds of the Subterranean queen. The world that opened up before him was a place of wonder. Stretching far and wide were countless buildings of shining metal. They were honey-combed with windows or doors, he did not know which.

There seemed to be no vegetation of any kind. The palace grounds were flat, like a neat yard surrounding an extensive Surface estate. But the grounds were as smooth as glass and were of shining metal which had the aspect of bright nickel under the dull glow of a small blue ball that stood, sun-like, on the distant horizon.

For an instant he thought the strange globe was the sun, made bluish in color by a pall of smoke of some sort. He glanced at its often. It was like looking into a blue sky from the world he knew. But here and there in the air were strange flyers. They possessed great speed and were propelled through the air by ejections of gases like the flyers he had seen at the crater. Otherwise, all seemed serene. The Inner World, apparently, did not know that the Surface had brought their war right into their own back yards.

"What's that blue ball on the horizon, Larkin?" Bob inquired curiously as he taxied his ship up close to the Queen's palace which stood almost in the center of the metal grounds.

"That's the central sun, skipper!" said Larkin. "They have a sun here same as we have. Only theirs is a ball of radium which keeps them warm. It is fixed in that one spot, I learned."

The Queen's palace loomed up now. It was a great structure of metal, beautiful, but ominous and forbidding. It was more geometrical in design than the buildings in the distance. Strange carvings on its walls added to its strangeness. On one wall Bob saw the carving of a tremendous animal flying through the air on bat-like wings. The body had the appearance of an elephant, but the jaws were without the long tusks. It had the face of a savage dog, fangs bared, a forked snake-like tongue lolling from slavering lips.

He recalled Larkin's description of the ferocious man-eating *pachydactyl* of the Subterranea, a beast of veneration, and instantly recognized the carving for what it was. He gave it no further thought and glanced over his shoulder for a glimpse of the Golden Squadron. Ships poured from the corridor and taxied up behind him. He waved a hand at Britt, whose ship came alongside. Then turning to Larkin, he spoke.

"Give me directions how to find the Queen's throne room, Larkin!" he said.

Larkin pointed to a great door that opened into the palace from the grounds. It was like the mouth of a corridor, arched and tunnel-like.

"They took us in that way, sir," said Larkin. "There's a long hall there leading direct to the throne. But I doubt if you'll find her there now. The place seems deserted. I'll bet my shirt, if I had one, that they got wind of our attack and flew the coop!"

"We'll investigate anyway," said Bob scrambling out of his cockpit. Larkin attempted to climb down, but was motioned back into his seat. "You've got to remain here,

Larkin!" Bob ordered him. "You'll be killed without a gold uniform to protect you! Stay in the plane and keep guard! Turn your taas rays on the first Subterranean or flyer that comes along!"

"Oh, hell!" grumbled Larkin, forlornly. "And I've been lookin' ahead for a fight!"

"Tough luck!" grinned Bob appreciatively. "But you've got to stay here! No telling what we'll find in the palace and we may come out on the run! With you guarding the planes, I'll feel safer. Now pipe down!"

"Aye, aye, sir!" Larkin saluted. He was plainly disappointed. But Bob was not to be fooled by the deserted appearance of the palace. He suspected some kind of a trap. The silence was a lure. But if Patti Marsden was held prisoner in that palace, he was going to find her or die trying.

Leaving Larkin crouched dejectedly in his seat, he clutched his taas tube, fingers on the control buttons, and marched cautiously toward the palace at the head of the golden-garbed pilots and observers. Britt strode anxiously beside him, plainly puzzled by the silence of the place and its deserted aspect.

Suddenly he caught a slight movement in one of the windows high up in the structure. He nudged Bob.

"There's somebody up there to the left in a window, Allen!" he whispered softly.

"I know it!" Bob grunted. "Just saw him move! But don't shoot! It might have been Patti Marsden!"

Britt grunted softly and marched on in silence. From the direction of the planes came the steady rhythm of idling motors. They had purposely left the props whirling at idle, should they need to make a quick take-off. But the hundred golden-garbed fliers, every nerve taut with expectancy, were not ready to flee yet. They followed Bob and Britt grimly, clutching their taas tubes, knowing that they were immune from the Subterranean death rays. They looked like golden knights with their face protectors down, eyes peering intently through tiny peep-holes in front of them.

"Why don't they shoot at us or something?" Bob asked Britt quietly. "This is like marching to slaughter!"

"Maybe they know we're immune to their rays," said Britt bluntly, "and think it's useless." His voice sounded weird, muffled as it was by his face protector.

"How could they know?" Bob hissed. "Larkin said every Subterranean was wiped out at the crater."

"Mental telegraph!" grunted Britt.

Suddenly a blue ray shot from the window high up. It struck Bob square on the chest. The Gold Squadron stopped short in surprise. So forceful was the beam that it struck Bob like a man's fist. He faltered backward, but did not go down. The roots of his hair tingled as if heated by the ray, his blood grew hot in his veins. It made him feel dizzy for an instant, but he fought it off quickly.

Britt let out a sudden curse and tipped up his taas tube. From it stabbed a blue ray that struck the window with a sizzling hiss. Instantly the entire upper corner of the palace crumpled like melted steel. From the roof of the structure darted quickly scores of the big Subterranean flyers. They rose into the air with a hiss, concentrating their rays on the planes.

Bob felt suddenly afraid for Larkin. He looked toward him desperately. From Larkin's cockpit shot a hissing blue beam. It caught one of the flyers across the nose, clipping it off as neatly as if a knife had done the trick. Then the pilots galvanized into action and though operation of the taas guns was new to them, they wrought terrible havoc in the hissing flyers overhead.

Britt turned his ray gun on the palace with a deadly glint in his eyes.

"Don't, Britt!" Bob cried at him. "You might kill Patti Marsden! She may be in the palace! We've got to be careful! If she's not in there, we'll wreck the joint!"

The Subterranean machines suddenly changed their tactics. As if their pilots realized that the Golden Squadron was immune to their taas rays, they began darting their hissing ships downward. Like hedgehopping blimps they hissed down toward the grounded planes.

A barrage of rays sizzled up at them from the golden-garbed fliers near the palace. A hundred beams cut through the air like hissing, glowing arrows, leaving long tails of fire behind them. A half dozen of the nearest machines crumpled, melted or vanished in puffs of blue smoke. Larkin yelled like a madman from his cockpit and sent a ray at a diving machine. It caught the flyer full on its blunt nose. The machine vanished in a puff.

Defeated in their first attempt to smash the planes by ramming them, the Subterraneans rose high into the air, where they spread out in long formation and as if by signal swooped down again.

"They're going to smash up the planes, Britt!" Bob yelled tensely. Then as the golden-garbed men grouped around him, he cried: "Stop them, men! If they wreck our ships, we'll be sunk!"

The Subterraneans showered them with sizzling rays. A flyer standing grimly beside Bob, his face protector shoved back carelessly on his head, suddenly slumped to the ground without so much as a gasp. A ray had struck him full in the face and as he fell, Bob saw that his head was missing completely. He groaned.

"All face protectors down, you fools!" he screamed at the men.

The unfortunate flyer, it proved, had been the only one who had failed to drop his protector down. But hands flew to faces to make doubly sure that the golden plates were in place. Then came another barrage of rays that struck them from many angles. But the golden garments they wore turned them aside, as a duck's feathered back turns water.

Hissing and advancing with ominous intent, the Subterraneans headed their machines straight for the grounded planes. Rays stabbed up at them as they came. From his cockpit, Larkin sent another flyer down in pieces, leaving the disintegrated parts struck by his beam, floating in a puff of smoke. Then the squadron, made desperate by the impending catastrophe hanging over the golden planes, got busy in earnest to wipe out the flying menace.

Subterranean machines went up in puffs. Others, shorn in two, plunged down, carrying their crews to death. But so desperate did they seem in their determination to destroy the planes, blocking all escape of the intruders, that the remaining flyers came on. Bob and Britt unloosed ray after ray upon them with terrible havoc. The men crouching around them scored hits at every turn. The Subterraneans, it seemed, did not know the meaning of the word retreat, for they kept coming until Larkin, with a whoop of pride, sent the last machine up in a puff of blue smoke.

The Americans triumphantly yelled. Once more the mysterious enemy of the Subterranea had been met and

vanquished! But Bob turned back on them in a flash.

"Half of you men come with me into the palace!" he ordered. "The rest will remain here to guard the planes and to ward off any attack! Come on, Britt!"

They broke into a stiff-legged run and made for the palace entrance. Their golden uniforms were uncomfortable and heavy, yet they ran, panting. In a moment they were at the entrance. Bob and Britt slowed up cautiously.

"Boys," said Bob to them quietly. "Some of you may not know it, but there's a girl—Patti Marsden—held captive down here. She may be in this building. We've got to find her and get her out safely. You won't be able to use your ray guns inside. If you turn them loose, you may bring the whole palace down on our heads! Put them away and use your automatics. But be careful you don't shoot Patti Marsden by accident! You may find a man in here named Norton. He will not be dressed in a gold uniform. Don't kill him! He's my personal meat and I want him for myself! Now! In we go!"

Taas tubes were carefully shoved into leg-pounches. Golden pistols were drawn as they went swiftly but cautiously into the great corridor that Larkin had said led straight to the throne room. They were too intent upon their mission, too alert for their own safety, to be impressed by their weird surroundings inside the temple, though Bob and Britt took note that the great hallway was a place of many large, door-like openings. Where these doors led, they could not guess. They felt small and insignificant in the great hallway and the fact that it seemed utterly deserted caused them no little worry.

It seemed strange that so vital a point as the Queen's Palace should be so niggardly guarded by the Subterraneans. It dawned upon Bob suddenly that Larkin had once told him that the Subterranean armies were at work in the great tunnels through which they intended to emerge to the earth's Surface for their humanity-destroying attack. The thought arrested him for a moment. Could it actually be possible, he asked himself, that this was so and that the Inner World had not even remotely expected a surprise attack from the Surface? Had the Subterraneans, in their eagerness to get at the Surface, taken every available warrior into the tunnels to hasten their completion, leaving the palace without sufficient defense to stand off a surprise attack?

CHAPTER XVI

BEFORE Bob Allen could do any more silent speculation as to the deserted aspect of the corridor, a pilot behind him yelled in alarm. They halted in their tracks, crouching.

"We're trapped!" the flier cried, aghast. "Look!"

With a tense hand he pointed back in the direction of the palace entrance, through which they had walked but a moment before. A great metal door had been soundlessly swung over the opening, shutting them off from the grounds outside. Then with a suddenness that startled them, every doorway that lined the walls of the place closed up! They realized at a glance that they were entombed, every avenue of advance or escape barred by solid walls and doors.

"Trapped, sure as hell!" swore Tom Britt in a taut voice.

Bob looked steadily for a moment toward the throne room at the end of the corridor. Like the hallway, it too had seemed deserted. But now throngs of grotesque Subterraneans stood at the doorway, peering intently into the corridor. Quickly he recognized the fact that a great door of transparent metal separated the corridor from the throne room. It glistened phosphorescently in the blue glow of the place.

With a curse he jerked up his automatic and let fly at them. But his bullets might just as well have been fired at a steel plate, for they splattered against the separating wall of transparent metal without effect. The Subterraneans behind its protection glared without apparent emotion.

As if his shots had been a signal, a great door near the throne room entrance swung away suddenly open. The golden-garbed fliers watched it. Scarcely had the door opened than an appalling, unnerving sight befell their eyes. Without warning a monstrous *pachydactyl*, carried on, beating bat-like wings, plunged into the corridor. Behind it came another of the great sacred beasts of the Inner World, cavernous wolf-like jaws open and slavering.

Appalled, the Golden Squadron stared at the menacing creatures like diminutive birds held in a hypnotic state by some tremendous reptile. Speechless and in unspeakable horror they watched the monsters lumber into the corridor, their spreading wings creating a thundrous din. They had the appearance of pachyderms endowed with bat-like wings.

Bob tore his eyes away from them and looked at his audience of Subterraneans behind the transparent door. He recalled suddenly the Bible story of Daniel in the lions' den and wondered if he would be so fortunate. There was a sudden commotion in the grotesque audience that had taken its place at the transparent door to watch the destruction of the golden-garbed intruders by the sacred beasts. The crowd broke quickly as if to admit someone for a clear view of the slaughter.

As the Subterraneans parted, forming an aisle between them, he saw the figure of a girl, garbed in a white sailor suit, dashing frenziedly up to the wall, her brown hair flying in wisps about her head. Behind her came a man, his face twisted into a snarl, reaching out to clutch her. But the girl reached the transparent door and crying desperately, beat upon it with her slender, helpless white arms.

"Patti!" gasped Bob. "My God! Patti!"

There was a sudden explosion of an automatic beside him. He turned to find the great beasts approaching with ominous intent, their jaws hanging open, great yellow fangs bared. Britt fired again at the nearest brute. Bob saw a blue hole appear in its sloping forehead, but it came on with an angry bellow.

"The ray guns, men!" Bob screamed. "The ray guns!"

He hurled his automatic aside, clattering on the metal floor, and yanked his taas tube from his leg-pouch. Before Britt or the others could draw their radium guns, he unloosed a sizzing beam at the nearest beast. There came a rank, nauseating odor of burned flesh as the ray caught the beast on the flank, cutting it almost lengthwise in two. It crashed to the floor and lay still.

Crouching he saw another monster dart toward the horrified fliers. By this time, Britt's taas tube was out. From it sizzled a blue beam. It struck the beast simultaneously with a beam shot from Bob's gun. The sacred monster's wings curled up and vanished in a puff. With

them went the *pachydactyl.* The frightened fliers backed before a savage rush of the remaining beast.

One of them unloosed a blue ray which missed the beast and bit into the arched roof of the corridor. A great hole appeared above. Molten metal splattered down to the floor. Then with a mighty sweep of its wings, the monster sent a half dozen golden-garbed airmen flying across the hall.

Cursing, Tom Britt aimed his taas tube. With deliberate calmness he brought it in line with the savage *pachydactyl.* As Bob brought his own ray gun up to spray the beast with death, Britt's beam caught it full in the face. Before their very horrified eyes the creature disintegrated and in its place in the air floated a great puff of acrid smoke. Wing-mauled men of the invaders picked themselves up dizzily from the floor. But they found themselves unhurt despite the great power the beast had used upon them in knocking them down with its wings.

Quickly Bob turned once more to the transparent door. As if on seeing that the golden-garbed intruders into their domain were armed with their own deadly taas tubes, the Subterraneans broke frenziedly away from the door and began running wildly through the throne room. In the mad scramble of creatures, Bob saw Patti in the grasp of Norton, being spirited across the room toward a high throne on which sat a tremendous Subterranean.

Without hesitation he yelled at Britt and his men to follow him and ran toward the door. Always ready to be one of the first in action, Britt pounded along beside him.

"What's up now, Allen?" he panted.

"I saw Patti Marsden and Norton in there!" Bob breathed anxiously. "Look! There they are now, over there by the throne!"

Britt needed no second invitation to look. He had heard so much about Patti Marsden and Norton that he was anxious for a good look at them. Bob had made no bones about Patti's looks. He realized at a glance that she was indeed a beautiful girl, well worth risking a life to rescue. And Norton! He concluded silently that the man had the indelible stamp of a rascal. His manhandling of the girl, as she fought like a wildcat in his grasp, was proof of his rascality. He seemed to have no more chivalry in him than the ferocious *pachydactyls.*

Whatever his intentions or purposes were, Norton was half dragging, half carrying the fighting girl up a flight of metal stairs that led to the Queen's throne perched high up on a pyramid-like affair. They were dwarfed by the great proportion of the high throne and the big chamber surrounding them. Majestically the queen, a tremendous creature of the Inner World, herself sat stolidly and unemotionally on her throne. She stared down at the man and the girl with fixed eyes.

"So that fellow is *the Mr. Norton,* eh?" Britt snarled at Bob.

Bob grunted his reply as they attained the transparent door. Without hesitation he stepped back and unloosed a sizzling ray at it. The transparent metal curled up like burning cellophane, dripping molten sparks. Then like an acetylene torch cutting through steel, he carved a big hole in the door, the taas beams biting into the wall and roof of the throne room, safe away from the throne itself and its precious occupants.

As he performed this task, he shot quick glances at Patti. Norton had taken her to the top of the throne now and she lay crouched in front of her Subterranean Grotesqueness. Norton, very much worried and afraid, stood near her staring down at the transparent door. Bob's fingers itched to curl around his treacherous throat. As he dove through the hole he had made in the door, he was determined to kill the man with his bare hands.

Britt followed him quickly into the throne room. The golden-garbed fliers scrambled through. With leaps and bounds Bob tore for the throne. Britt, panting, pounded at his side, taas-tube uplifted, ready to unloose death at any opposition to their advance.

Except for the occupants on the throne and themselves, the room seemed deserted now. But scarcely had they reached the first step leading up to the Queen than into the room poured squads of flying Subterraneans. As if still doubting that the golden-garbed intruders were immune to their rays, they whirled up and unloosed a barrage of blue beams at them.

Quick as a snake darting its angry head at a victim, Britt tipped up his taas tube, swung it back and forth, and returned their fire with deadly hate. Bob sprang into action as blue beams sprayed around him with no more effect than causing his hair to tingle at the roots. As he unloosed his rays he marveled that the floor under him had not been wafted away by the beams from above. Concluding that there was a knack in using the taas tubes of which he was not aware, he let fly at a group of Subterraneans and saw them vanish in puffs of acrid blue smoke.

The golden-garbed airmen got into action quickly, some with pistols, others with ray guns. The roof became a shambles. Great holes appeared where their rays plunged through. The spat of automatics rang dully through the place. Puffs of blue smoke hovered overhead. Flying warriors, their bodies mangled by explosive bullets, hung dead in space under their motors.

All the while, the warriors had painstakingly kept their rays from the throne itself. Bob saw this eventually and yelled at Britt.

"I'm going to get that dirty sculpin on the throne, Britt!" he cried fiercely. "They won't shoot at the throne for fear of hitting their queen!"

"If they do, it'll be too bad for Miss Marsden!" rasped Britt. "But go to it! We'll keep these warriors at bay!"

He aimed his taas tube at a warrior whose flying device had carried him too close for his own good. The fellow vanished at the tip of Britt's ray. Then his attention was attracted to another horde of flying Subterraneans who came up swiftly to reinforce those already engaged in a losing fight. They streamed through doors almost on every side. Howling with glee he turned his ray gun on them, then glanced around for Bob.

Bob Allen was already half way up the stairs. At the top, almost within reach of the Queen who still sat in stolid silence glaring at Patti, crouched Norton. In his right hand he gripped a blunt-nosed automatic.

"I know you behind that golden-get-up, Allen!" he screamed madly. "Stand where you are or I'll kill you! Bullets are one thing you're not immune to!"

At the mention of his name, Patti bounded up from the platform. She made a quick lunge at Norton, but never reached him. The Queen's long, skinny arms shot out like striking *fer-de-lances* and encircled her body. She squirmed and fought like a demon. The Queen held her tight. Her slender white hands beat fiercely into the creature's awesome face. But the Queen held her.

Norton laughed owlishly as the deadly grip held her fast.

"Good God, Norton!" Bob gasped. "Don't let that brute maul Patti! Have you gone mad?"

"Not mad, Allen!" snarled Norton. "I've just become cautious! I'm going to make you a proposition!"

"No proposition you make will save you, Norton!" hissed Bob. "I'm going to choke you to death if it's the last thing I do on this earth!"

He fixed his gaze on the monstrous Queen. She sat on her throne almost behind Norton. She was almost twice as large as an ordinary Subterranean and was garbed in a robe of shimmering blue metal that was as pliable as homespun silk. She looked little different than her subjects, though somewhat more grotesque and cruel. Her eyes were unblinking and red, set at the sides of her head. On her gargantuan head, setting off her crow-like features in clownish fashion, she wore a lofty tiara of pale blue metal.

Bob had not noticed it previously, but he saw now that the towering crown continuously glowed, throwing off infinitessimal sparks in all directions like a Fourth of July sparkler. So small were these strange radiations and so rapidly were they thrown off from the tiara, that they were scarcely visible.

He saw that she was steadily drawing Patti to her hideous body. She held her now with one arm. With her free hand she suddenly clutched the girl's middy blouse at the throat and with a fierce jerk, tore it open, revealing her heaving breasts. Patti screamed in indescribable horror. Allen bounded up another step, but Norton snapped his automatic forward.

"Where do you want it, Allen?" he snarled ferociously. "One more move and you die! I told you I'd kill you if I ever got the chance. I've got it now. But I'm going to bargain your life and Patti's for my safety and freedom! Ready to listen to my proposition?"

Bob, unmindful of the savage fight that raged about him, heard Patti in a desperate voice call out to him as the queen drew her closer. He glared at Norton, filled with a sudden desire to tip up his taas tube and blast the man from the earth. But he controlled himself quickly, realizing that to send a ray sizzling at Norton would endanger Patti's life. He shrugged helplessly, his eyes aflame with hatred.

"Out with it!" he hissed at the erstwhile captain of the *Scienta*. "I'll listen!"

"Good!" Norton exclaimed sarcastically. "You've got some horse-sense after all, Mister Allen!"

"Never mind that!" hissed Bob, raging inwardly as though his whole being were afire. "What's your proposition?"

"Guarantee my safe return to the Surface and that no charges will be filed against me," Norton leered shrewdly, "and I'll let you live. To seal the bargain I'll stop that crow-faced wench on the throne from sucking Patti's blood!"

It dawned upon Bob suddenly that Larkin had once told him that the Queen of the Subterraneans was a vampire. So, he told himself unconsciously, that was why the grotesque beast perched on the throne had torn open Patti's middy blouse! He stole a fearful glance at the creature. Patti was writhing, screaming in her grasp. The Queen was gloating over her white throat and breasts as if denied something for a long time and then suddenly finding it within reach.

"How will you stop her?" Bob almost screamed at Norton, who undoubtedly knew the Queen's vulnerable points.

"Shoot her, you fool!" snapped Norton.

Within a moment the Queen would sink her awesome beak into Patti's throat. Bob's whole being rebelled at the thought. He crouched as if to spring up the remaining steps.

"Well, what about it?" Norton snarled at him, covering him menacingly with his gun.

Bob glared up at him hatefully, his better judgment telling him that Patti alive would be worth ten thousand dead Nortons.

"It's a go, Norton!" he snapped. "I'll promise anything to save her from that terrible thing!"

Norton laughed shrewdly.

"I don't want a promise, Allen!" he said with a sneer. "I want an iron-clad guarantee!"

"I can only give my word!" barked Bob.

"Not enough!" retorted Norton.

"Then what in hell can I do, man?" groaned Bob helplessly.

"Write out a statement to the effect that I came to the Inner World not as a traitor to the Surface," said Norton jeeringly, "but as a spy. Sign it and hand it to me! That's all I want! And you better hurry! The wench will sink her beak into Patti's throat at any moment!"

"You're a dirty yellow dog, Norton!" snarled Bob viciously. "But you've got me and I know it!"

He reached into an inner pocket, withdrew a pen and notebook. Quickly he scrawled out an affidavit, placed his name at the bottom and, handing it out, walked up toward Norton. Leering, Norton stepped away from the throne and started down the steps to meet him.

Suddenly a blue beam sizzled past Bob's face from the corridor that led to the throne room from the palace grounds. He crouched mechanically, afraid to look up at the Queen lest he should learn of Patti's destruction. He steeled himself to look and glanced up. What he saw on the edge of the steps caused him to rebel inwardly.

The ray had struck Norton! It had been released from a taas tube with the button controlling the *strip-ray* pressed down! And Norton's skeleton stood upright on the edge of the top step, swaying grotesquely from side to side. Death had overtaken him so suddenly that even his bones seemed held together by his own surprise. His skeleton tottered there for a brief moment and then toppled over to go clattering dully down the steep stairs on the other side of the pyramidal throne.

Instinctively Bob glanced toward the corridor for a glimpse of his benefactor. Standing just within it and out of sight of the remaining Subterranean palace guards who were meeting destruction at every turn at the hands of the golden-garbed airmen, stood another skeleton. It waved up at him and then cupped its grisly hands around its grinning teeth.

"How'd you like that shot, skipper?" came Larkin's voice, reaching him shrilly where he stood.

Realizing that he should have known better than to leave Larkin outside with the planes, Bob raced up the remaining stairs toward the Queen. The gargantuan creature was holding Patti tightly now. But Patti was offering no further resistance. Bob's heart nearly stopped when he saw her lying limply in the vampire Queen's skinny arms. With a curse he cleared the last few steps with a mighty leap.

The Queen, hearing his clattering feet, or sensing his intentions of killing her, looked up. Bob snapped up his taas-tube, intending to risk a quick shot at her evil-looking head. But before he could press a control button, another blue beam hissed from the corridor.

There was a puff of smoke in the vicinity of the Queen's head. Her skinny arms flew up in a spasmodic jerk. Patti was hurled clear and landed with a bruising thump on the floor. As Bob rushed to her side, he saw the pale blue haze rise from around the Queen's head.

With a gasp he observed that her head had completely vanished from her body before Larkin's well-aimed ray. With it had gone her lofty, radio-active tiara. He bent over Patti's limp form as a yell from Britt caused him to look down at the base of the throne. As he did so a strange sight met his eyes.

The remaining Subterraneans hovered limply in the air. Not a ray came from their taas-guns now. There were perhaps four score of them in the air. But life seemed strangely to have fled them with the sudden destruction of their Queen.

Baffled and wonderingly, Bob returned his attention to Patti. Her eyelids fluttered weakly as she recovered from her faint. Her blouse lay open at the throat. He saw quickly that the hideous Subterranean vampire had failed to make her contact with the jugular under the milky-white skin. He gave a sigh of relief. Her eyes popped suddenly wide open.

"Bob!" she cried, regaining her composure instantly.

He took her in his arms and crushed her to him.

"Oh, Bob!" she cried again, this time in a sobbing voice. "You've come for me!"

"Yes, Patti," he whispered into her ear, burying his face in her curling brown hair. "I've come for you. Are you all right?"

She snuggled closer to him.

"Oh, it was all so horrible, Bob!" she sobbed. "Norton has treated me so terribly! The beast!"

"That's all right, Patti," soothed Bob, quietly.

"He is a beast!" she insisted angrily. "He is worse than the Queen! Oh, how terrible!"

"They're both gone, now, Patti," said Bob grimly. "They're dead!"

She shuddered in his arms.

"It was Norton who schemed to have you killed by the sacred *pachydactyls,*" she said quivering. "Oh, it was too terrible! Thank God you escaped with your life."

She sat up suddenly as if remembering something of vital importance to impart to the man she loved.

"Bob!" she cried. "Did you say the Queen was dead?"

He jerked a thumb at the headless thing sitting on the throne. She looked at it in fascination and then tore her eyes from it.

"Oh, I'm so glad!" she added, sobbing. "They will not attack the Surface now and wipe out humanity."

He looked at her curiously.

"What makes you say that, darling?" he asked, incredulously.

"Because the Subterraneans are only robots under the influence of the Queen!" she said. "They depended upon the Queen for their vitality, animation and every movement they made! I learned that the Queen was endowed with everlasting life unless violence destroyed her and that if she died, every Subterranean would die with her. You saw the crown she wore?"

Bob nodded, incredulous that one lone creature could control the lives of countless others and of mankind.

"With the aid of that crown and by her own powerful mentality," Patti concluded, "she controlled the movements of every single Subterranean. It was like the remote controls we have on the Surface for controlling ships and airplanes. Wasn't it wonderful? Had she and her subjects been more human and less the beast, it would have been even more wonderful! But now we have no more to fear of the Subterraneans. Without their Queen, they are nothing!"

At the sound of footsteps behind them, they turned. Britt and Larkin had come up unnoticed to the throne and were regarding them curiously.

"You heard that, Britt?" Bob asked, helping Patti to her feet.

Commander Britt nodded happily.

"You bet, Allen," he said, "and I'm tickled to death!"

Patti gave a start and a little cry when she beheld Larkin's ghastly skeleton standing beside Britt. She shrank away from him, cringing close to Bob.

"Don't be afraid of Larkin, Patti," Bob grinned. "Why, he wouldn't hurt a fly! Would you, Larkin?"

"He certainly cooked Norton's hash!" chuckled Britt, patting Larkin on the back. "Larkin was a mighty good sailor in the old days. When we get back home, I'm going to see that he gets full credit and promotion for his services here."

"Thank you, sir," said Larkin, clacking his grisly jaws together appreciatively. "You're right. I think I performed a real service when I cooked Norton's hash. And boy—wasn't he well done when he toppled down the stairs?"

"I'll say he was!" applauded Bob. "But now that we have nothing more to do here, we might as well get out. The future Mrs. Bob Allen will want to see her father."

"Of course!" said Commander Britt. "And I want to get back to old Cape May. I've got a wife and two kids there I haven't seen for fifteen years. I wasn't going to return if I ever got out of here alive, but I met an old friend on the *Wyoming* who told me she was waiting for me, had never given up hope that someday I'd come back. Miss Marsden, if you show that kind of loyalty for your future husband, you will certainly be a wife to be proud of!"

"I'll do my best, Commander Britt," she replied, blushing. "I'm going to love my future husband more than he'll ever know!"

"Thank you, Patti," smiled Bob, "but I don't think I'll ever put you to the strenuous test Britt subjected his wife to by getting caught in the Subterranea."

"You'd better not," she admonished. "I might fail after all. Now what are you going to do, Mr. Larkin?"

Larkin perked up and seemingly scratched his ghastly skull with equally ghastly fingers.

"Well, miss," he said hesitantly. "It's hard to say. I haven't got a wife, nor even a sweetheart to return to. But when I get back to the crater, I'm going to find the Subterranean physical normalizer that they used on us poor slaves to keep the radium from eating us up. I'm going to get in the thing and stay in it until my flesh becomes visible again. That's all I care about right now."

"After that," grinned Britt, "we may be shipmates again, eh, Larkin?"

"I'd like nothing better than to sail once more under you, sir," replied Larkin.

"Spoken like a good sailor, Larkin!" applauded Bob

warmly. Then addressing Patti. "Shall we go, dear?"

She gave his arm an affectionate squeeze. Together they passed the horrible, headless thing sitting stiffly on the throne. She gave a little repulsive shudder as Britt and Larkin stepped aside to let them pass. Glad to be away from the stark remains of the once powerful empress, they went quickly down the stairs, with Britt and Larkin both following jauntily in their footsteps.

They went quickly across the throne room, unmindful of the limp bodies of the Subterranean warriors that hung above them, suspended in space under their functioning flight devices. With an air of triumph, the airmen fell in behind, wondering why the warriors had ceased fighting, to hang in death in the air!

THE END

Solarius

By ALCUIN DORNISCH

THIS is a very vivid presentation of solar phenomena, conveying a fund of instruction in the form of a charming story. The personification of science phenomena is excellently carried out in this narration.

THOUGH he could accept the spot warfare as trivial and the heroism of his soldiers as commonplace, Sol-198*** wished to be known as a patron of the sciences, particularly of astronomy, and was always eager to reward his savants, for advertising purposes only.

From them he had learned that the third planet*, a green one, No. 3, was again to be occulted by its satellite and all its star gazers would turn their instruments on the sun, a wonderful chance for a little publicity. R45-L did not resent the fact that these tiny little balls swinging around his world were dependent on him and his fellow soldiers and workers for life. His particular duty was to see that the heat and light carriers could get out unhindered, to put on a fool show for them was another matter. No. 3 had the eclipse habit and he remembered how one of his predecessors had been rewarded by the king with a soft job in one of the inner levels, for building up a lot of prominences to look like its vegetation during a former occultation.

Well, if that was all his ruler considered necessary for a drop to the Blue or Violet he'd put on a show for those goofs on No. 3 if he had to make the protuberances look like their own foolish faces.

So he issued orders to the rice grains to collect the necessary meteor waste to flash into space when he'd get the radio from the royal observatory and was in the midst of his calculations to locate the exact point for his bonfires, when a vibration impinged on him and he saw his friend, R18-G, another Photovian, and his second in command floating towards him.

Solarian, R45-L, sector chief of the northern sun spot zone and resident of the photosphere, was grumbling at the order that called him up into the cold outer level of his world.

The order had been flashed to him, signed by the king old Sol-198*** himself, and the Photovian might grumble and grouse after the manner of soldiers since the first nebula—but he was at his post and ready for duty. He had been expecting promotion to an inner level for his work in the last sun spot trouble. By the soul of hydrogen, that was some scrap. If the convection currents which the heat and light workers used as elevators in their labors through the outer layers broke down again, he hoped it would be in some other sector than his.

As soon as the congestion started, those damned meteors no longer rayed into gas by the workers at the infra-red frontiers, came crashing through the cromosphere and photosphere to spread like mountainous cancers over the defenseless rice grains †.

L had led his warrior faculae ‡ over the penumbra of a monstrous spot, in the van of the invasion from space, and succeeded in burning out the nucleus before it had a chance to divide or bore very deep, then after a rather nasty mess the smaller spots were volatilized.

Cold work, for a gas, used to the temperate warmth of the photosphere, in comparison some parts of the 'spots nucleus' were absolutely frigid. And now, instead of a promotion, he was up here again on orders to build prominences, a fine job for a soldier.

R18-G was just out of the military academy and a short time ago had been full of theories about remaking the service; now, however, spoiling from inaction and the jibes of the ranks he was fast degenerating into a lady-killer, and L had been contemplating his removal to

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* The earth about to see an eclipse.

** Sol-198^{m}, the figures are the weight of the sun in tons thus: 1,980,000,000,000,000,000,000,000,000. The daily loss necessary to maintain radiation is 360,000 million tons.

† So called because the surface of the sun resembles a bowl of rice or tapioca.

‡ The faculae are bright spots on the sun's surface.

§ The figures for velocity and size are average for such phenomena.

one of the infra-red posts where officers either made good or were flashed out.

But because G was the son of an old friend and because he remembered his own miserable apprenticeship on one of those freezing outposts, he deferred giving the young officer so strenuous a trial.

"I have some news for you, Chief," said G.

"What's up now?" asked his commander. There was little formality in L's sector during peace time.

"A couple of the king's lady favorites are flying up to watch your fireworks and if you're nice to them and pull off a good show you'll get dropped to center yet."

"If I had as many janes chasing me as you have, I wouldn't have to go to center to keep warm. Who will be with them?"

"Just an escort of eunuchs but you won't have to worry about those pimps."

"Humph," snorted L, "now get rid of that female over there and get to your post. I may need you. Sure I knew she was waiting for you, now scram."

"All right, all right, I'm going, but remember to recommend me for sector chief when you get your audience at the core."

"A fine sector chief you'd be," muttered L as the youngster turned away, "and just the kind of an untried gas that would be stuck in my place if I should get a drop."

Soon all was in readiness to be touched off at the astronomer's signal and the solarian chief was chuckling at the surprise in store for King Sol. The junior officers had some misgivings as to whether the court beauties would risk the cold of the photosphere, when one of the gases reported a car coming up through the levels.

It came to a stop near him and, preceded by their escort armed with cold ray weapons, the three vapors in waiting swam out. They were accompanied by many therms of heat to protect them against the low temperatures of the upper layers.

In a moment they were mincing about L and the officers of his faculae battalions. He was too aloof for them, however, and they left him pessimistically watching a few favored lieutenants make the most of an opportunity, that to these isolated soldiers came all too rarely. He was becoming impatient but at last the observatory message came through the rays, "Ready 1-2-3-4-5 FIRE", and darting up from the sun's surface at the rate of 150 miles a second, appeared, a huge likeness of the king, Sol-198^{m}.

As the model rose 100,000 § miles into space every mother's son of the battalion floated to attention and the ladies broke out in a chorus of Ohs! and Ahs!

Slowly it faded and died away, and with profuse thanks, that L realized cynically were only the court form they had been taught, the fair visitors entered their car and were soon speeding down to the center and to King Sol, who, no doubt, had been watching the whole performance through his visi-plates. While he was morosely giving the rice grains orders to police up the site of the fireworks, an orderly came whirling in with a message that the spots had broken through the outposts and were in control of an upper area of the sector.

Here was something L understood; gone was the slackness of a moment before.

"Lieutenant R18-G," he called.

"Here, Sir."

"Mobilize the faculae to full war strength and start all heat units we have here to zone NKE6. Then get the commandant of the central guard and tell them we must have the gases they transferred to the capital for their confounded political parades. You will be in charge here, so rush them up to me as soon as they arrive."

"Yes, Sir."

"Just got another radio, Sir," said the signal corps gas. It was addressed to him and he read: "Turn your command over to one of your subordinates and report to center immediately regarding recent prominences in your sector." Signed WQ-56-O, Chief of Foreign Relations.

"By the heat of my ancestors," swore L, "they would pick out a time like this. Lieutenant you will have to take the troops to NKE6 and here are your orders. Mop up the outlying spots, keep plenty of vedettes on the main body and, if possible, don't precipitate a general action. I'll get back as soon as I can and if you're in doubt about anything ask the sergeant. Remember, the command has been doing this sort of thing for a long time and you don't know it all, even if you have just graduated from Occident Apex."

"Yes, Sir."

Getting into his car, L dropped to center.

Now he was whirling through the levels—Red, Green, Blue, Violet—and he was at the palace gate. This was not his first trip into the beautiful core of his world, but tough soldier that he was, L never quite got over the wonder of it. Such heat, such pressure, it would be pure delight to live here This was the goal of every solarian, he looked with envy at the glorious gases around him, decorations and orders blazing everywhere. A sudden jealousy shook him. What had these dandies ever done to earn their medals, their ease and comfort?

If the gases of the faculae battalions were not constantly combating the spots, those spots would soon be in the center and then, he wondered, how much of a scrap could these beauties put up.

He hoped G was making out OK, perhaps he should have put him wise to that enveloping movement, the spots were so good at.

"ICE," he growled to himself, (this was a strong oath). "They're up there fighting and here I am—", then he heard his name called and found himself before the king in obeisance.

"Arise, Captain," he heard his ruler's voice. "You have pleased us greatly this day and we appoint you commander of the guard in the Blue with the rank of colonel."

The newly-made colonel looked up, he saw a gas iridescent with decorations, the gross features showing plainly a life of ease and self indulgence. Behind and beside the king, his courtiers and sycophants were as much like him as their circumstances and stations would permit.

R45-L did some fast thinking.

"Your Majesty," he bowed, "is too gracious, but I feel I cannot accept your boon."

First a flash of surprise, then anger grew in the royal countenance.

"Perhaps," the monarch said sternly, "you do not consider it recompense enough?"

"Nay, Sire. It is far too much, but my reason for refusing this excellent post may excuse my boorishness.

(*Continued on page* 808)

No More Tomorrows

By David H. Keller, M.D.

WHEN we say that this story is characteristic of the highest degree of Dr. Keller's work, we feel that we are awarding it a high meed of praise. It is a little in the line of some of Edgar A. Poe's strange fancies. It is charged with an element of the grotesque, with an interesting bit of psychology from one who is an acknowledged master in that branch of mental science.

IN thinking over the great disaster of my life I am always impressed with the fact that I came near success. There was only a hairbreadth between success and my ambitions. It is true that I failed, but I am not the first man who failed because of too great trust in a woman.

The idea would never have come to me had it not been for a peculiar combination of circumstances. First came the fact that I was, by years of labor, one of the greatest of psychological workers in the entire world; perhaps it would be better to state that I was not one of the greatest, but THE greatest. Then came the failure on Wall Street and the loss of my entire fortune. At that time, when I needed ready cash, the thought came to me, and I lost no time in capitalizing it.

Fortunately for me the Internationale had agents in New York. I had heard of them, their activity and their unlimited funds. Within three days I had arranged for a conference.

There were three of them. To this day I know of them only by their numbers. "Twenty-one" seemed to be the leader. He was a small one-eyed man with a head that seemed to be a constant burden to him on account of its unusual size. It needed to be large to hold all the store of knowledge he possessed. "Forty-seven" looked like an idiot. He had the largest nose I have ever seen on anyone; it seemed to start at the hair line and, sweeping down over the face in a generous curve, ended within a short distance of his chin. In talking he used that nose as a trumpet, varying the tone and volume by partly closing one or both nostrils with the tips of his fingers. He was nauseating to look at but adorable to listen to. "Thirty-four" was a blind man with one arm. I thought for a long time that he had lost it in the late war, but one night I found that he had a very short arm growing out of the shoulder.

"Twenty-one," "Forty-seven," "Thirty-four"—these were the men Russia had placed in America to undermine our social fabric, and make us easy plucking, when the day of final reckoning came. These were the three men I met in the back room of a slum restaurant the night that I sold everything I valued for the gold they had so much of.

They sat there on three sides of the table. "Twenty-one," as usual, supporting his hydrocephalic head in his hands, elbows on table; "Forty-seven" humming a Mozart melody through his nasal trombone, and "Thirty-four," his face with hollow sockets twitching pitifully, tapping nervously on the table with the one hand that was able to reach it. No wonder I was nervous and slightly nauseated, for, though I had a wonderful idea, I was not at all sure of my ability to convince them of its worth.

"The human brain," I began, "is the organ which differentiates man from the lower forms of life. We, the human race, the *Genus Homo,* owe our supremacy to the great development of that brain. The mid-stem, the cerebellum, is similar in anatomy and function to that of lower types, but when we consider the cerebrum, the two hemispheres, the various lobes with their twisted convolutions, their deep sutures, then we see what makes us more than animals and only a little less than Gods.

"Gentlemen, I ask you a question. What do we do with those lobes of the bilateral cerebrum? We accumulate knowledge. Once we acquire a fact, that fact is never lost, at the worst it is only inaccessable in our subconscious, awaiting the proper stimulae to cross the threshold and become the property of our conscious ego. So, we acquire knowledge.

"In other words, we remember what we have learned and that mental quality is call memory. How far back does memory extend? Who knows? Freud, Adler, Jung, White, all of them, quarrel over the question. They cannot agree as to whether memory can be inherited or only acquired. I, as a psychologist, have my opinions, but why bother you with what I think!

"For there is something more important to consider tonight. I am thinking of the mental power of preparing for the future. Ah! That power indeed is possessed only by man. The squirrel buries a nut, but, forgetting where, allows it to grow into a tree; the mason-wasp may place food in an eathen cell, but she fails to see that the scientist, Fabre, has carefully cut the bottom out of the cell, destroying its usefulness.

"Man prepares for the future. He does it only as an individual, but as a nation, and almost as a race. Working in the todays of life, all his plans, ambitions and desires are located in his tomorrows. How have the

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great nations of history attained to their fame? By carefully planning the future of their national life. Every rich man has become such by having a vision of the future and then making a programme for his tomorrows. Am I right?"

They agreed with me. The truth was axiomatic. There was no need of argument. In fact, I gave them credit for seeing where my argument was leading me, before I reached the middle of it. So, I went on:

"In every nation there are at best a hundred men who have a sufficient mental force to plan for the future life of their commonwealths. They sit and dream, and then translate their dreams into economic and militaristic programmes, which, they hope, will make their nation greater. These men are not concerned with the naval tonnage of today. What they want to know is the ratios that will exist between them and their rivals ten years, thirty years from now. They live in the future. They can only look one way—forward. Historians backward turn their piercing gaze through the vanished centuries, but those dreamers think only of the history that will be made in the years to come.

"All the nations have their eyes set on Russia. They know that she is a sleeping giant, a terrific entity that so far has not learned to apply its power. The nations fear Russia, and the dreamers of all the nations are preparing for all the tomorrows, when the Great Bear will come down from the Ural Mountains.

"Your country faces a superhuman task in its plan to socialize the world. You also have your dreamers. I know that you have plans for the next ten, the next fifty years. But the nations are playing a game of chess with you, and their intelligentia is at least as brilliant as yours.

"Now here is my thought. Suppose something should happen to the one hundred great thinkers in a dozen of the supreme countries of this earth? Suppose that something should happen simultaneously to all of them? And what if this something prevented them from paying any more attention to the tomorrows of their nations? Can you visualize what would happen with England, France, Italy, Japan, the United States, and a half dozen more, simply living in the todays of life? Legislation would collapse for lack of leadership. Finances would become despairing wrecks. The economic foundations of the world would be shaken. Armies would disappear, and navies would rust away in the harbors. Only Russia would plan, only your country would be able to progress, and, whenever you wished to, you could crush the rival nations as a steam roller crushes out the ruts in an earthen road. And that is the idea I want to sell you."

"Magnificent!" shrieked "Twenty-one."

"Beautiful!" whistled "Forty-seven" through his trombone.

"But an impossible nightmare," sighed "Thirty-four," his pallid face twitching as he threw aside my plan as a fantastic dream.

"I am a psychologist," I continued, not in the least dismayed by their criticisms, (for I knew the real truth of the theory). "For years I have studied the human brain, normal and abnormal. With scalpel, and every known instrument of precision, I dug into that greatest of all creations. And some time ago I found out something that no one in the whole world knows. *I located the brain center which enables man to visualize the future and plan for it. I have found out the part of the brain where he keeps his tomorrows.*

"That in itself is an achievement of note. But," and here I lowered my voice to a whisper, "what would you think if I told you that I have isolated a toxin, so specific, so powerful, that it can be given to a man in his food, just a few drops, and at once the ability of this *Tomorrow Center* is destroyed. It simply ceases

to function. The man lives on as he has always done, but he has no more tomorrows."

"You say it can be given in food?" whined "Forty-seven."

"A drop or two in a grape, or in a glass of wine?" trembled "Twenty-one."

"I see it all! I can leap forward and in imagination visualize the results!" cried "Thirty-four." "It will make Russia ruler of the universe overnight."

"You are confident of your ability?" asked "Forty-seven."

"Absolutely!" and I was confident. More than that, I knew that these representatives of the greatest power in the world believed me, and would pay me well for the formula necessary to manufacture the drug. The manner of giving it, the ways that would have to be devised to finish the treatment, why, that was their business. So, I simply smiled at them as I repeated:

"Absolutely!"

They believed me. It was not even thought necessary to consult with the higher men in the Internationale. There would be no signatures, they said, and no incriminating document, but ten thousand dollars that very night and ten million upon the delivery of the first four ounces of the drug with the complete directions for making it.

We shooks hands on it, and "Forty-seven," pulling from his pocket a roll of bills, counted out twenty $500 "yellow boys." At the sight of what he had left, I cursed myself. I could have had ten times ten thousand without a protest, but I knew the other money would be soon mine. And Leonora would be mine. She had resisted the love of an unknown scientist, but when she knew that she could help in the spending of ten million dollars, what would she say? And there would be more than that. These men had told me that if the medicine worked, I could have anything I asked of Russia—anything I wanted, and they would be glad to give me my slightest desire, because of the great gift I had handed them.

I wanted to tell Leonora about it that very night, but I had to go to the laboratory. Every moment was precious; with millions awaiting me, there could be no delay. Once in the workshop, I telephoned to her, whispering that I had real news and that I would see her soon. Was it foolish of me to end by saying that soon I would be able to give her all she had ever desired of life, everything she had ever dreamed of?

From the time I hung up the receiver there was intense work. I worked and slept and ate and worked, and, as I watched the precious drops come out of the Berkfield filter into the sterilized glass beneath, I knew that they were more than so many minums of devastating toxin. Far more! Each drop meant golden dollars, precious moments of happiness with Leonora.

At last I was through. My agreement with the Russian representatives called for a first delivery of ten cubic centimeters of the drug. This was enough for experiments on ten men. If this experiment was satisfactory, I was to be given one million dollars and was to start at once with the preparation of sufficient of the drug to paralyze the ambitions of great men all over the world. On the delivery of the final amount, there were to be nine million more handed me, and if it all worked as I said it would, perhaps ninety million more would be given me by the grateful mistress of the world.

I was to meet the men at twelve o'clock that night. At five I had finished my task. The 10 C.C. was in a glass-stoppered bottle. I had it safe in my right hand vest pocket. In the left hand vest pocket was a similar bottle, filled with water. Held to the light, both bottles looked alike, one on one side and one on the other. I wanted to show them to Leonora. For that night I was going to dine with her. Days of hard work and nights of tedious watching had separated us; now there was going to be an evening of pleasure and some pardonable boasting.

We ate in a semi-private alcove of a New York restaurant. I presume the food was good. All I can remember is how much like a wonder-woman the lady of my heart looked that night. She had always been inclined to tease me a little about my inability to succeed, but when I gave her the diamond pendant, she knew, she could not help but know, that I had struck my pace.

Then I told her all, slowly, with microscopic exactness, I told her the entire story. I saw her shiver as I described the head of Twenty-one, the nose of Forty-seven, the blind face of the one-armed Thirty-four. But when I spoke of the millions, she flushed and breathed deep, and I know then that she was a woman with a price and I could at last buy her.

Very carefully I explained what I intended to do. How with the destruction of their tomorrows the leadders of the universe would lie prostrate and helpless before the Great Bear. In words of one syllable I described the centers of the brain, and told of my great discovery; and then I showed her the two bottles.

"Just like water, you see, My Dear," I explained. "Think of it! A cook in our employ places a teaspoonful of this liquid in a cup of coffee and a great man drinks that cupful. From that time he becomes useless to his country. He simply lives in his todays. Imagine a hundred of the leaders of England all being similarly affected in one day. Before substitutions could be made for them the British Isles could be overrun."

"And they will do that to France, and Italy and our United States?" asked the simple minded beauty.

"Yes, to the whole world."

"And you will be great, rich and powerful?"

"I will be everything you want me to be. Think of it! Able to give you anything you want."

"And it is all in that bottle?"

"Yes."

"Suppose we drink out of the one bottle. A toast to your success, and my happiness."

So I emptied the one bottle into our wine glasses and we drank. And then I put the other bottle back in my vest pocket. It was past ten, and for a while we just chatted. Then the woman started to laugh, at first a little chuckle, then low rippling peals like murmuring waterfalls. Of course, I wanted to know what she was amused at, and she did not hesitate to answer me.

"You have done something for me tonight, that I can never repay you for. And I have done something for you that you will never forget. All my life I have worried about the tomorrows of my existence. I knew as a child that I would be beautiful, but I soon found that all beauty is ephemeral, and that perfection soon ripens to decay. No matter how earnestly I tried to avoid the unpleasant passages of life's poem, I knew

that they were waiting for me just around the corners of tomorrow.

"In addition to that, I love this country of ours. Of course, I know its imperfections, its greed, racketeers, political scandals, marital failures, but it is a wonderful country, and I love it. I could not think of its being conquered by Russia, and when you showed me the bottles, I thought I saw my chance. You were looking at my pendant, the new plaything you had given me, and then I remembered your saying that the new medicine looked and tasted like water, so, while you were looking at the pendant on the woman you wanted to buy, as you would a plaything, I shifted the bottles on the table, and, Oh! don't you see the humor in it all? You have the water in your pocket and we, each of us, have one half a bottle of the drug within us. I think it is working on me already, because for the first time in my life I do not fear tomorrow; I have a peculiar sensation, a most startling, odd sensation, and that feeling seems to tell me that there will be no more tomorrows in my life."

"Nonsense!" I cried. "You just think you shifted the bottles. You wouldn't do a thing like that. You couldn't! You are just teasing me."

"Think so?" she jeered. "Then how about this? I'll marry you tomorrow."

And before I realized it I had said it. I tried to choke it back. Even went so far as to raise my hand to cover my mouth. But it was too late. I said it and I knew that it was true.

"But we shall have no tomorrows," I gasped, and hated myself for the admitting of it.

Well, it was done and could not be undone. Eleven in the evening and the three men to meet at twelve! But twelve would be the beginning of a tomorrow; so, I could never meet them. I had a little money, a few thousand left out of the advance. What could I tell them? The truth? Would they believe it? How could I show them that even in my horrible condition I was proving to them that my invention was a success?

No doubt as to what would happen! They would kill me! That in itself would not be so bad, but how about Leonora? Even in spite of her treachery to me, I still loved her, was still insanely in love with her. Well, there was only one thing to do and that was to discover a cure. It seemed that somewhere, in the realm of medical skill, there should be something that would bring me back my tomorrows.

First, I thought of psycho-analysis. Then of hypnotism. Perhaps a long period of anaesthesia would enable me to turn the trick. All this came to my mind as I sat silently across the table from Leonora, and then, despairingly, I left her. She laughed at me as I left the alcove.

"Goodbye," she jeered. "I will see you tomorrow."

I went back to my rooms. Fortunately, the Russians did not know where they were. No one did. I worked in the laboratory, and I had told Twenty-one where that was, but none of my assistants knew where I slept. So, in those rooms I felt safe. Arriving there, sleep overcame me. Waking, there came the thought that it all had been a horrible dream, a fantasy, born of indigestion, a corrosive nightmare. Hastily the bottle in my vest pocket was analysed, and then came the certainty—— it was water. For me there were no more tomorrows. I was simply in a perpetual today.

Nine that morning found me in the office of a great psycho-analyst, a healer of souls, a prober of the subconscious. I told him my problem. He smiled at me kindly, assured me that my fears were groundless and suggested a course of treatment.

"I can begin on your case tomorrow," he said, with a smile.

"That statement in itself is sufficient to show me that I can expect no help from you," I cried in despair. "How can you start treating me tomorrow, when that day will never come?"

So, I paid him his bill and left the office.

I telephoned to the laboratory. Yes, there had been visitors there, just as I knew there would be, and they were hunting for me. Well, let them hunt! They never would come upon me unless I wanted them to.

A few hours later found me in the office of a celebrated hypnotist. That time I was not taking any chances on a specialist's misunderstanding me.

"I want you to give me a tomorrow," I began. "I am not hunting for a dozen or a thousand tomorrows; just one. If I can find myself in the dawn of just one tomorrow I will know that I am cured of my disease." And after a great deal of talking on my part I showed him just exactly what he could do for me.

"I am sure that I can help you," he assured me. "My plan is this. We will wait till nearly midnight and then I will hypnotise you. I will suggest to you that you revive your former personalities, go back into the age of the dawn-man, the Roman, the Englishman, the settler of America, the Revolutionary patriot and finally I will bring you back to today, but your mind will be flowing so fast that it cannot stop, and when I awaken you, your existence will already have gone forward into the future, and when that happens you will be cured."

"That sounds good, and what time shall I be here?"

"About eleven tonight."

"Then I will stay right in your office."

It was there that he directed me to look at the revolving light. He whispered into my drowsy ear. And crashing backward into the dead past I went, just as he said I would, back to the dawn man and the saber-toothed tiger, back to the building of the first wall around Rome. I saw and took part in a sea battle between the fleets of Rome and Carthage, and even as my ship sank I found myself with Columbus, sailing westward toward the fabled Indies. What was this new battle? Oh, Yes! I was with Washington at Germantown, and later charged with Picket through the blood-stained wheat field of Gettysburg, and now I was in New York in my laboratory, making devils' broth to sell to Russians, and then something snapped and I awoke. There was the hypnotist gazing anxiously at me.

"How do you feel?" he said.

"How should I feel?" I almost shouted.

"How far did you get in the dream?"

"Only to the events of today."

"But you have been almost dead for hours. I never was so alarmed. For hours you have scarcely breathed.

"But is this tomorrow?"

"No. This is not tomorrow. That will not be here for eighteen hours. This is just today."

In spite of my anger, I started to sob. Just another failure; but, at the same time, another proof that my drug was doing all that it had claimed to do. I paid the man and slouched out of the office. Was I being followed on the street or was it just my jumpy nerves?

In a telephone pay-station I listened to Leonora. She was having the time of her life.

"How can I thank you for what you did for your sweetheart? And where have you been? I have been having a most wonderful time, one thrill after another, and never a care or a worry. Now that I am sure there will be no more tomorrows, I am getting an awful kick out of the todays of life. Why not join me? Come on! I know a new night-club and we will simply kick the hours away to the latest jazz."

But somehow I could not look at it the way she wanted me to.

I lived on. That was the pitiful part of it. I ate and hid and tried to think; at times I slept from sheer exhaustion. But always I found myself in the todays of life. At last I sought the aid of a physician. He told me that I was living on my reserve strength.

"Unless you stop and rest, you are liable to collapse, and perhaps die. You must take better care of yourself," he advised.

"Just when do you think I shall die?" I whispered.

"Anytime. Perhaps during the next week, and it may be tomorrow."

"Then I shall live on forever," I told him. "Doctor, tell me honestly. Did you ever know of a case like mine? Have you ever treated a man who has lost his tomorrows?"

It was interesting to see the way the man looked at me. He must have almost thought that I was insane. At least, he started to phone to the police, and that was a signal for me to rush out of the office. Police meant newspapers and reporters and notoriety. None of that for me.

But outside the office, right on the street, men closed around me and forced me into a waiting taxi. Once in there, I could easily tell what had happened. A large head, a blind face and another face, all nose, easily helped me to identify my traveling companions.

Later on they took me into a bare room in a third floor back tenement. Just a table and four chairs.

"You tried to goldbrick us!" accused Twenty-one.

"Took our gold and then endeavored to escape!" whined Forty-seven, and he almost sung a tune with those eight words, as he breathed them through his nose.

But thirty-four simply started to take off his coat. He took off his coat and his vest and then his shirt. Fascinated, I looked at him undressing with his one capable arm. At last I saw the mystery of the blind man. The unusualness of it made me gasp. Twenty-one, who had been watching me closely, started to laugh as he explained it to me.

"Odd? Decidedly! Of course, he is blind, but that doesn't make any difference, because we bring his prey to him. His one long arm is weak, so much so that he uses it only for the nicer things in life, like eating and dressing. But look at that hand growing out of his right shoulder! That hand is unusual. It has been pronounced as a real anomaly by some of our greatest anatomists. It is a hand without an arm, but it has muscles, the pectorals in front and the powerful back muscles posteriorly. Once that hand closes on a throat, it never lets go. During the Revolution dear old Thirty-four just sat in a chair and we brought him the nobility —and he did the rest—with their throats. Odd? But not so much so when you know his history. Before he was born his mother had to stand by while her husband was literally being torn to pieces by one of the Russians, who thought they were Gods. So, poor old Thirty-four was born with only one arm, but, as you will soon find out, he has two hands, and one of them is very —yes wonderfully capable.

At that I looked at the hand closely. It was beginning to open and close as if practicing for the sonata, that was soon to play. For a minute I was sure that this was the end. In spite of myself, I trembled and a cold chill swept over me. I knew that I had lost Leonora forever. Then the big nose Forty-seven blurted out triumphantly,

"We are going to wait till tomorrow and then—you will die of air hunger."

At that I laughed. They looked at me in astonishment,

"Oh! This is too much," I gasped in my mirth. "Why, if you are going to wait till tomorrow, you will never be able to kill me. Don't you understand? The toxin was really a success. I tried it on myself! It worked. *YOU CANNOT KILL ME TOMORROW, FOR I HAVE NO TOMORROWS!*"

THE END

Solarius

(*Continued from page* 803)

I have been experimenting with a new fuel for solar prominences, to further increase the honor of your reign and show your Majesty's features to the uttermost bounds of space. The work is rather dangerous and can only be safely carried on at the outer levels." Pompously Sol-198-25 arose, "Colonel R45-L, your patriotism shall not be forgotten and with your new rank, we bestow upon you the order of the Ultra-Violet. Now what can we do to aid you in these experiments?"

"Your Majesty, I need more gases and more heat units."

"Here is a blank signed order, fill it out to suit your needs."

Pausing only long enough to thank the king, L hurriedly sent a message to the Blue and Indigo, for reenforcements to be sent to his sector headquarters and whirled upwards to his base.

Hastily collecting the replacements, he led them towards the war zone and just in time, R18-G was bottled up between two immense spots, facing extinction.

Selecting a point at the rear of the nearest spot, where the shielding penumbra was thinnest, he threw his new troops through it, burned out the nucleus and consolidating with G's forces they attacked the other spot. This was the life. To ICE with their soft jobs in the pleasure levels. . . .

THE END

Death By Radio

By Edward Podolsky

THIS highly original story touches on what radio can do, possibly, in the dim future. We constantly find in the daily papers references to this sort of achievement, and in this story our author tells us of a wonderful thing done by the elusive ether waves.

"LISTEN to the following item from the evening edition of 'The Mail,'" said Munson, and he read:

"Professor J. L. Van Sicklen, Head of the Department of Physics in University College, was found dead in his private laboratory last night. The police and his family are inclined to believe that his death was not due to natural causes, although there are no external signs to warrant the belief that death was caused by foul means. Chief Medical Examiner Vorenberg will hold an autopsy."

Almost as soon as he finished there were two gentle raps at his door, and at Munson's invitation to enter, the door was opened by a young lady, who almost as soon as she entered inquired:

"Dr. Munson, I presume?" Before Munson could reply she continued: "I have had to see you, Dr. Munson, about the death of my father, Professor J. L. Van Sicklen. I observe that you have already read the newspaper account of his death," indicating the item in "The Mail." "I somehow feel, although I cannot account for this feeling with any reason, that my father died from something else than natural causes. It is perhaps a woman's intuition, but I do feel that things are not just right."

"There may perhaps be some reason for your feeling the way you do. I shall at any rate look into your father's death."

Munson and Kane visited the Van Sicklen residence the morning of the following day. It was a three-story house, situated in the most exclusive residential section of the city, and built to the specifications of the late Professor Van Sicklen. A private laboratory occupied the entire upper story. This was a large room filled with electrical apparatus and appliances of every kind and description. Variously colored bulbs, incandescent lamps, vacuum tubes of every kind, and meters with white dials were scattered on tables everywhere. Large jars stood on the tables, filled with electrolytes, with plates immersed, and copper, and in some instances silver wires, dangling to the floor. There were particularly radio apparatus of various designs, for Dr. Van Sicklen was particularly interested in radio.

After a rapid examination of the room Dr. Munson asked the butler who had conducted him to the laboratory: "Who discovered Dr. Van Sicklen dead in this room?"

"It was Miss Van Sicklen and I, sir."

"Would you mind asking Miss Van Sicklen to come up here?"

The daughter of the late physicist came in answer to Munson's request. "It was getting on toward noon," she began in answer to Munson's query as to how she had found her father, "and I was going up to the laboratory to inquire whether he would have his dinner, for, when father was busy with his experiments, he did not think of eating and had to be reminded of that duty. When I tried to open the door I found that I could not, and becoming alarmed I called Hawkins and he forced the door down. When we entered we found father lying across the table with that loud speaker he had designed for some special work in radio that he was carrying on at that time. We thought he was asleep, and when we tried to arouse him we found that he would not respond. Dr. Finch came in response to our call and pronounced father dead."

"Was your father subject to heart attacks?"

"No. He was in perfect health, and always had been. In fact, Dr. Finch, who had examined him only two days previously, had pronounced him to be in the best of health."

"That is what made you believe that your father had come to his death by foul means? Don't forget, Miss Van Sicklen, that it is quite possible that your father may have suffered from an ailment not readily detectable by an ordinary physical examination. A coronary thrombosis, or even a structural affection of the adrenals, have often been found to be the cause of sudden death. What else did you notice when you first entered the laboratory that may have seemed suspicious?"

"There was a sort of faint sweetish odor in the laboratory that I had never noticed before."

"That may have been due to some of the chemicals that your father may have been experimenting with on that particular day. There's nothing else here that will help us at the present time. Dr. Finch may have something that may assist us.

Dr. Finch was able to spare Munson but a few minutes from his time when Munson arrived to see him in his office some half hour later. He had examined Professor Van Sicklen, he said, and had found him free from any serious derangements, and as far as he knew he had never complained of anything that would have caused his death so suddenly.

"Miss Van Sicklen tells me that she noticed a faintly sweetish odor in the room when she first entered the room. Was the odor still perceptible when you had arrived?"

"Yes. But I paid no particular attention to it at the time. But now that you mention it, I seem to recall that the odor was somewhat familiar. I can't just place it now."

The autopsy was performed by Dr. Vorenberg and he arrived at the astonishing conclusion that Professor Van Sicklen had died from cyanogen poisoning. Further examination of the viscera by chemists confirmed this suspicion. Dr. Finch now recalled the faint odor present at the time of his call as that of bitter almonds. There seemed no doubt now that Van Sicklen had poisoned himself or been poisoned with that hydrocyanic gas.

Munson went over the laboratory again in light of this new knowledge, but no solution of hydrocyanic acid, or any compound of that poison was anywhere to be found. Moreover, no containers revealed that they had recently or at any time contained this chemical. Nor had it ever been used in the Van Sicklen residence or at any of the adjacent houses. Yet there was no doubt that Professor Van Sicklen had died from the effects of cyanogen poisoning.

Here indeed was a most baffling problem. How had the cyanogen gained entrance to the laboratory when there had been no means of it doing so. The windows had been barred, the door did not have the conventional keyhole. The room was made sound-proof, and was almost air-tight; there were no crevices or other means by which the gas may have seeped in from the outside. There was nothing within the room, no chemical compounds, which by being mixed would react to give off any cyanogen compound. And yet this was the gas by which Van Sicklen had come to his death.

Munson now took up his residence in the private laboratory of the late Professor Van Sicklen with the faint hope that, by spending his time there, he would get some inkling of the genesis of the poison gas. He became particularly interested in the radio apparatus, which, however, meant little or nothing to him, since it was not the kind of radio paraphernalia in which the ordinary man is interested and could obtain in the stores. They were of Van Sicklen's own invention and design.

Munson had been given full permission to go through the papers of the late professor. From these he learned that Van Sicklen had been interested in the application of radio for other purposes than the transmission of sound. For instance, Professor Van Sicklen had perfected radio-television, and somewhat later, an apparatus by means of which heat was transmitted and successfully received by radio. In fact, his own house and that of some of his most enterprising neighbors had been heated this past winter simply by heat waves sent through the air and received by special radio receivers which then propagated the heat waves and heated the rooms.

One particular notation in the notes of Van Sicklen interested Munson. This was entered in a little leather-covered note-book which he had found secured in a steel bond-box. Van Sicklen evidently did not want this note-book to reveal its contents to anyone, for he had taken special pains to lock it away where it would not ordinarily be found. The notation read:

"I have been convinced for some time that human

I called Hawkins and he forced the door down. When we entered we found father lying across the table with that loud speaker he had designed for some special work in radio that he was carrying on at that time.

happiness is, for the most part, the normally complete satisfaction of the special senses. The special senses are five in number, and according to their aesthetic value are arranged in the following order: Sight, Hearing, Smell, Touch, and Taste. If any means can be devised to make the appeal to these senses more easy, human happiness will be accordingly increased. *Radio* has been that means. The appeal to the sense of hearing by radio has added more happiness to the human race than we can ever hope to estimate. The appeal to the sense of sight has been made possible through radio television with very gratifying results. Heat waves by means of radio transmission have solved the problem of heating a great many homes from one central plant; incidentally, an appeal to the tactile sense. The sense of taste has not yet been gratified by radio, but I am working on a radio device that will appeal to the sense of smell."

Professor Van Sicklen had been a sensualist, one who believed that the satisfaction of the special senses constituted happiness. He had therefore devoted the latter part of his life to the perfection of radio machines, each adapted for a particular purpose, to propagate radio waves perceptible to four of the five special senses. His last work was the perfection of a radio apparatus for the transmission and reception of scent waves.

Scent waves are as capable of radio transmission as sound or heat or light waves, he held. Evidently Van Sicklen had perfected the means for the transmission of these waves. The strange "loud-speaker" on the table on which table Professor Van Sicklen had been found dead, assumed a new significance. On closer inspection it proved not to be a loud-speaker at all, but the receiving end of the scentograph, the scent-receiving radio appliance. The answer to the question, "How had the odor of cyanogen gained entrance to the laboratory?" seemed now to have found a possible answer.

Young Dr. Wald, the associate of Professor Van Sicklen, admitted quite readily that he was the only one who had been working with the professor on the scentograph, or knew anything of its operation. He also found it futile to deny that he was the only one familiar with the transmission of scent waves and was the only one in charge of the transmission end of the scentograph.

"Professor Van Sicklen got the idea from Dr. Zinieff, the Russian physicist for his scentograph," related Wald. "Dr. Zinieff's apparatus was called the scentogram which had the power of strengthening perfume 10,000 times. This latter machine split up scent sprays and was capable of being attached and operated by an ordinary wireless outfit or a telephone. Professor Van Sicklen went further and perfected the scentograph which is capable of propagating scent waves electromagnetically. The transmitter was in the University College physics laboratory, of which I had charge, and the receiver was in Professor Van Sicklen's private laboratory at home. At first I transmitted over or through the ether, scents of roses, violets, sandalwood. These came over rather weak, but unmistakably perceptible. Then Dr. Van Sicklen conceived the idea of transmitting poisonous gases through the air. He wanted to know if it were possible. I tried to dissuade him from such an idea, but he persisted. He was willing to take a risk, and so he asked me to transmit some cyanogen compound through the scentograph which I did."

Dr. Wald was not held for the death of Professor Van Sicklen, and everyone was willing to let the whole matter drop by regarding Van Sicklen as a martyr to a foolish impulse. He had nevertheless showed the awful possibility that lies in the transmission of scent-waves by radio. The senses of hearing, sight and touch may be gratifyingly appealed to by radio waves, but if it is ever possible to put into large operation the transmission of scent waves some very potent means of destruction will surely be ushered in. If it is ever possible to use radio as a means of murder it will be with the perfection of the scentograph, the transmission of scent waves electromagnetically. Dr. Munson's destruction of Van Sicklen's notes and apparatus, has, however, ended such a possibility.

THE END

ANNOUNCEMENT

Our readers, we are sure, will be delighted to hear that the "Moon Pool" stories by A. Merritt are to come out this Fall in book form. We have been so informed and feel sure that this will be interesting news to many of our readers. Few stories that we have published have elicited more appreciation from our readers than these have achieved, and there have been many requests for copies, which we were unable to supply. The publishers are the Liveright concern of New York.

The huge lock melted swiftly away under the combined attack of a half dozen flame pistols. Before its liquid metal had ceased dripping Bob was pushing through the gates.

Roadways of Mars

By Harl Vincent

THIS is a Martain story by Harl Vincent who ranks as one of the great favorites of our readers. There is plenty of adventure in it and some nice, little bits of astronomical science. If we said too much we would be killing the story so we leave our readers to work out its intricacies for themselves.

CHAPTER I

Into the Drylands

SWERVING sharply from the main roadway along Canal Pyramus, the glistening nickel-cobalt surface of a narrow and seldom-used branch stretched out into the desert. Bob Coleman, leaning forward in his seat beside the Martian operator of the government ronsal, looked out over the smooth ribbon of metal that unrolled so swiftly beneath them.

"How much farther, Dako?" he asked.

"About six linis—hardly ten minutes of time as counted by your terrestrial chronometer."* The coppery-skinned Martian replied in the respectful, unhurried drawl of his kind, but his pale eyes never left the roadway before them nor his hands the controls of the vehicle which sped through the thin air a few feet from the surface of the track.

They spoke in Sol-ido, the simplified tongue of twenty-first century interplanetary travelers. And the words that had passed between them since leaving Risapar, capital of the Canal Cities Union of Mars, were few in number. Neither man was of talkative disposition.

Bob turned his head and gazed through the glass partition which separated them from the passenger compartment. With satisfaction he observed that his own men, eight in number and Americans all, were in cheerful spirits, though keenly regardful of the parched drylands that spread beneath the elevated roadway. The five Martian police officers who had accompanied them from Risapar, lolled in their cushioned chairs, somnolent, and with bronzed features relaxed. But Bob knew they could be relied upon in an emergency.

It was more than he had bargained for, this missionary jaunt into the most dangerous province of the drylands. But now he was in it, he would see the thing through to the finish. And who in his position would not? Taking the long rocket trip from the earth to Mars, he had come as a free-lance, transportation engineer, worming his way into the confidence of the Canal Cities Council and obtaining a contract for the construction of two thousand miles of nickel-cobalt roadways into hitherto unserved territories. A nice fat contract it was, and highly lucrative. He had not seen the joker in it until it was too late to withdraw, even had he wished to do so. A joker that made of him first a propagandist, sending him into the far-flung arid lands, where he must convince the nearly savage natives of the benefits that must accrue to them with the coming of the lofty towers and their roadways of swift traffic.

An unprogressive and superstitious lot were these drylanders of Mars. Bleached of skin and uncouth of speech, they were a race unto themselves and dwelt in distrust and savage defiance of their more fortunate kin who lived in the fertile lands along the canals. There was warring continually between clans, and productive of many dangerous bands of marauders, whose depredations extended even to the greatest of the canal cities.

As the ronsal neared the end of the branch roadway, Bob turned again to the operator.

"Dako," he grinned, "There'll be thrills in this for us. We've spoiled our own world, overcivilizing it. Spoiled it for adventure, at least—there's none to be found there nowadays."

"You will find it without seeking in the drylands," the Martian drawled, "But it is not for me. I return with the ronsal."

Bob Coleman laughed. "You Martians are without romance," he observed. "You're too stoical and easy-going. Don't you ever get a kick out of anything?"

Dako turned pale but expressive eyes on him for the briefest instant, then shrugged his broad shoulders. "Hardly ever," he conceded. "It may be we have tired of the struggle. Or, possibly, the climate of our land has made us lethargic. And that is why you strenuous Americans have been so successful among us, commercially and in promoting engineering projects such as this."

"The bandit tribes of the drylands seem to have enough energy." This was sheer baiting of the operator and Bob cast a sidelong glance at him in anticipation of a protesting rejoinder.

But none came. Instead, the imperturbable Dako shrugged again. "You have heard from your brother?" he asked irrelevantly.

* The Martian day is slightly longer than that of the earth, the planet Mars rotating on its axis once in 24 hours 37 minutes of earth time. This longer day is divided into 30 derlinis, and each derlini into 30 linis. 900 linis comprising one Martian day, the lini is thus equivalent to approximately 1.64 minutes. The smallest time division of the Martian clocks, known as the zut, is the hundredth part of a lini and is therefore almost exactly equal to a second of time as measured by terrestrial chronometers.

The American sobered. "Yes, by etherphone just before we left Risapar. Gordon is awaiting us at the terminus with pack animals and provisions, arms and ammunition—everything. Why do you ask?"

Dako made no reply. He was too busily engaged with his controls as the ronsal slowed down and came into the shed of the terminal station. When the tapered cylindrical vessel had ceased its forward motion, there was the soft throbbing of the atomic engines in the rear compartment. And they hovered there in midair an instant before the repelling energies of the charged nickel-cobalt roadway were neutralized by the ronsal's powerful force generators, then sank gently to the surface.

Here amongst the latticed towers at the end of the branch roadway sprawled the village of Tos-tanor, ostensibly under Union rule, but comprising a motley population of lawless outcasts of the canal cities. Beyond lay the powdery bleached sands of the desert.

Bob and his party came down from the roadway by way of the lift. Emerging from its cage in the waiting room of the station, they saw that the place was guarded by Union police and that a large crowd had gathered in the square outside.

"Looks like a reception committee," grinned Bob.

But Danny Matthews, his civil engineer, was solemn as he replied, "May be a hot reception, though. The cops are having some trouble keeping them in order out there."

What Danny said was true. An ominous muttering swept over the mob as the Terrestrians and their Risaparian guards pushed out to the railed balcony of the station.

Gordon Coleman was there on the balcony with his friend Kurt Davis and a low-caste bronze-skinned Martian. Faces looking up from the square, some coppery in hue, some ghastly white, were unfriendly and grimacing. Many drylanders had come in from the desert.

"It's all right, Bob," Gordon assured his older brother, gripping his arms in powerful raw-boned hands and looking into his face with black eyes alight with excitement, "Just as I told you. This little demonstration doesn't mean a thing. Our jikiris—the tough little burros of the drylands, you know—are just outside the town. Arms, supplies, and all are ready. And Zeranu here——" He thrust forward the shifty-eyed Martian who was with him. "——Zeranu will interpret for us so the drylanders will get it all. Better talk to them, Bob."

"Gordon." Bob's keen eyes looked into those flashing black ones that were level with his own. "You've been lying to me. Hell is brewing out here and you know it. You've been hurt, too."

"Oh, that." Gordon Coleman laughed as he caressed the surgical dressing that extended from the angle of his jaw up back of his ear and over several inches of scalp. He tossed back his mane of black hair and hooted disdainfully. "Nothing but a scratch. And I didn't lie, Bob, I didn't. This mob'll listen. When *you* tell 'em, they will. Go on now, give 'em the works."

Pride was in the youngster's voice and utter confidence in the spellbinding ability of the brother he had looked up to since his earliest remembrance. But underneath his care-free assurance was a jerkiness and nervous uncertainty he could not hide from Bob.

"Gordon——" the older man gulped.

"Do as he says," hissed Danny Matthews, interrupting.

"Yes, you've *got* to," Kurt Davis put in, "They're waiting."

A hush had come over the crowd, whether threatening or merely expectant they had no means of knowing. The local police and those from Risapar were stolidly watchful.

"All right." Suddenly decided, Bob Coleman grasped the skinny biceps of the interpreter. "Tell them, Zeranu," he snapped, "that I wish to address them, that you'll translate."

The shrill chattering of the outcast Martian cut into the twilight. Utter silence greeted his words; the rabble was indeed waiting.

Bob spoke then without preamble. "This thing we are doing," he told them, "will bring prosperity and new opportunity to the drylands. It will carry to the remotest province the advantages of the canal city dweller. Pipe lines will come with the roadway; there will be water to increase the fertility of your lands. A closer understanding will arise between the races."

He paused while Zeranu translated rapidly. A bellowing voice answered from out the rabble—gibberings in the dryland tongue.

"What did he say?" growled Bob.

"Him say," in halting Sol-ido from the interpreter, "that devils of fire live on top towers. Imps of flame dance in darkness."*

Bob chuckled appreciatively, having seen the eerie corona discharge of the nickel-cobalt roadways by night. Again he raised his voice—"There are no devils; it is merely a force like that which lights the cities. No—it is more like the natural force which causes a body to fall to the ground, excepting that it works in the reverse direction. It is harmless, only lifting the cars from the roadway so they may be driven speedily on their way with only the friction of the air to hold them back. *We* are unharmed, we who have ridden——"

"It's too deep for them," husked Gordon, at his side. "Try another line, Bob."

But Zeranu was chattering importantly, explaining to the mob. A murmur of amazement and indicating some degree of understanding swept across the square. Outcasts from the cities were confirming the words of this Terrestrian in swift mouthings addressed to the drylanders with whom they rubbed elbows.

And then a hideous uproar came up from the far side of the square. Charging down one of the narrow streets was a group of riders led by a huge bearded drylander. At the swift clattering of jikiris' hoofs the mob broke up, panic-striken and screaming as they crowded into the nearby dwellings and fought to escape through the constricted, cobblepaved alleyways. The local police stood their ground until spouting white flame from the riders' pistols put them to rout. The Risaparian officers, better trained and of greater courage, went into the fray undaunted and with riot-pistols roaring.

"It's Bingord, Bob," Gordon was yelling, "Quick, down through the station and out behind. Here's a flame pistol."

With the cold metal butt of the weapon in his fingers,

* A large amount of electrical energy is transmitted along the towers for energization of the thousands of miles of nickel-cobalt roadways paralleling the canals of Mars and now extending into many sections of the drylands. The force by which the ronsals are raised from the road surface, in order that wheel bearing friction and traction losses be eliminated, is one that has the effect of producing a gravity-neutralizing field immediately above the smooth metal ribbon of nickel-cobalt alloy. In producing this field, high frequency currents having a tension of 600 kilovolts (600,000 volts) are used. The corona discharge from conductors subjected to this super voltage is observable at night in brilliant tufts of eerie blue light and is caused by the ionization of air surrounding the conductors. In the denser and slightly differently constituted atmosphere of the earth, similar discharges are observable in power transmission lines of even lower pressures such as the usual ones of 66 to 220 k. v.

Bob wanted to fight it out with the bandits. But Gordon pulled at him frantically and the others urged him to retreat.

"They're too many for us," his brother panted as they ran through the darkening and deserted station, "And Bingord is the toughest bandit in these parts. We are not all armed, either—not yet."

Outside the station, they were carried along in a howling, fleeing rabble. Gordon pushed on ahead, flinging aside those who obstructed his path, as if they had been ninepins. A rider swung in out of a side street and white flame streaked out toward the bobbing, black head of the sprinting youngster. A miss. Bob shot down the bandit, shouting to Gordon as the raider's one blast splashed harmlessly against a wall.

"Stay with us, boy," he yelled. "We've more chance together."

"I'll get him," Kurt Davis grunted, forging ahead through the jam. "We'll make the camp all right. It's just outside town at the end of this street. Hurry——"

Then both youngsters were gone and the nine Terrestrians with Bob Coleman at their head were battling their way past steaming, filthy creatures who ran and fought and screeched unceasingly. It was a bedlam, a horrible endless dream. The short Martian twilight deepened abruptly into night. And over it all rose the crackling roar of flame pistols and the hoarse shouts of the raiding bandits.

Danny Matthews was at Bob's side, driving piston-like punches into leering faces that loomed up before him. Trampling the limp bodies that slumped to the pavement under his blows. And the rest of the Terrestrians, yelping their defiance, were close behind.

Stumbling, panting, groping in the darkness, they came out of the narrow lane. Abruptly they were in the desert where the sands gleamed whitely in the starlight. The darkness was shot with stabbing shafts of light over to the left where there was a blur of dark forms. And the shouts of battling humans mingled with the crackling of flame pistols and the doglike yapping of jikiris. A clattering of many hoofs was trailing off into the night. Silence then, save for the hubbub in the village which was gradually subsiding behind them.

"The devil!" roared Bob, "It's our outfit. The bandits—that's why Gordon went on ahead. Come on, men."

"May be they're safe," Danny Matthews tried to tell him.

But Bob hardly heard. "Gordon!" he called out again and again. And swift terror clutched at his heart.

A voice replied unintelligibly, and then he had stumbled over a dark form that showed dimly against the white sands. Jikiris stamped and yapped close by.

Danny and Bob were on their knees when the rest of the party closed in around them. It was Kurt Davis who lay there, with half his chest seared away by the white flame of a bandit's pistol, his clothing charred and smouldering over the horrible injury.

"Bob," he whispered, "They—got him—got Gordon——"

"Killed him?" An unrecognizable voice came from the big American who knelt there, a voice fraught with misery and cold with the promise of vengeance. Bob Coleman's voice and yet that of a stranger.

Danny Matthews' teeth chattered. Bob heard them distinctly.

"No." Kurt Davis moaned and his voice quavered off into silence. The watchers were sure he had gone. Then, weakly—"Bingord rode off with him—kidnaped him, Bob—he——"

A rattling cough, a last effort to speak, and the dark form lay still. Bob Coleman bared his head to the Martian sky as he rose to his feet. Danny Matthews cursed softly but with deadly earnestness.

CHAPTER II

Bingord's Trail

PHOBOS, inner satellite of Mars, rose swiftly above the western horizon, casting long black shaows of the tethered jikiris. Though much smaller and less bright than earth's moon, the illuminated body was in full phase and proved a vast improvement on the faint light of the stars.* But the drylands ahead were empty of life, mysterious. And the village behind was a dark smear against the sky, a sprawling blot where a few lights flickered and ominous silence reigned.

Other corpses were here in the white sand, three in all. One was that of the Martian youth whom Gordon had hired as a guide; two were bandits. Resistance had not been altogether futile.

The Americans were among the jikiris, soothing the excited beasts with gruff, friendly words and fingers that stroked the sleek bullet-shaped heads.

"Nothing missing here," Danny Matthews announced. "At least they left us our animals and supplies. Wonder how come."

"Yeah, it's queer. And why the capture of Gordon—beating it so quickly with him?" Mystified by the banditts' tactics and undecided as to the next move called for, Bob was examining the trappings of the jikiris. "Ten with light packs and saddles," he muttered, "and two loaded to the guards. Good job the boy did."

"What do we do now?" asked Danny.

"We'll get them—get Gordon." Bob raised his voice in sudden decision: "All right, men, choose your mounts and make sure your flame pistols are in their saddle holsters. We ride tonight."

"With no guide?" one of the men objected.

"Ought to be plenty of guides in Tos-tanor. We'll go back and take one on." Bob had singled out a lively jikiri and was astride him as he spoke.

"No need hunt guide in village. She's all locked up in houses, afraid from Bingord," a scornful voice spoke out of the shadows.

"Zeranu!" Bob wheeled in his saddle and stared down into a pair of beady eyes that flashed bright in the light of Phobos.

"Yes, Zeranu follow. Know Bingord come out from village to get young Gordon. Know many things. Zeranu will show way to dryland devil place where Bingord live."

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* Two small satellites, Phobos and Deimos, revolve around Mars in an eastward direction and almost in the plane of its equator. The larger of the two, Phobos, is hardly more than ten miles in diameter and is but 5850 miles from the center of Mars. Deimos, the smaller, is 14,650 miles from the center. The mean diameter of Mars being 4339 miles, Phobos is only about 3680 miles from the surface. The curvature of the planet's surface is such that Phobos can not be seen in latitudes greater than 68 degrees 15 minutes north or south of the equator. The period of Phobos is 7 hours 39 minutes and Deimos 30 hours 18 minutes. Thus Phobos makes more than three revolutions while Mars rotates once. This moon, therefore, rises in the west, passes eastward across the sky, and sets in the east. The period of Phobos from meridian to meridian is 11 hours and 7 minutes. On the other hand, Deimos, due to a period of revolution longer than that of the rotation of Mars, rises in the east and sets in the west with a period from meridian to meridian of 131 hours 14 minutes. In the case of Phobos the direction of apparent motion is the same as the actual while the reverse is true of Deimas, one being faster than the mother planet and the other slower, but all three moving in the same direction.

"You're hired, if you can do this," exulted Bob, "but——" hesitating, "why are you so anxious for the job?"

The beady eyes were eloquent with hate. "Zeranu wait long time for this chance," the wizened Martian snarled, "Long years wait since Bingord kill Zeranu's woman. Now men from green star come and see; kill Bingord. We go?"

Bob Coleman whistled. There was no doubting the outcast's sincerity; the cracked voice bespoke undying ferocity born of his wrong, and eager assurance.

"You bet we go—*now*." Pressing knees to the sides of his restless mount, Bob was off into the desert. "Come on Danny. Come on you fellows that wanted action!"

Zeranu was in saddle and alongside in a flash, the rest of the outfit straggling after them as they rode.

"Not too quick, boss," the Martian advised, "We ride long time. And must go more to right. See, the way marked by great star there."

Sirius, the dog-star!* Bob's gaze followed the pointing finger and he marveled at the brilliance of the body as seen through the thin atmosphere of the red planet.

All that night they rode across the ghostly sands, and Zeranu talked incessantly. Prompted occasionally by a word of interrogation from the big American at his side, he related strange legends of the pale and dark races of Mars and stranger facts concerning the existing feeling between them. He enlarged upon his own family history and told of Bingord's systematic terrorization of the three provinces that lay in the line of the proposed roadway extension. The story of the downfall of the Canal Cities Empire and of the rise of the Union was his chief interest, and the many superstitions of the drylands his great delight. There seemed to be no fear in the scrawny Martian. And it was increasingly evident that he had not idly boasted of knowing many things.

Bingord, it developed, was a bandit extraordinary. A half-breed, born of an exiled princess of the old Empire and a giant dryland rover, he had been educated in the universities of Risapar. Acquiring thus a bitter hatred of the favored city dwellers and a deep contempt of the untutored drylanders, he had established himself as a foe of both races. And his stronghold in the lava beds of the first province was a place of terror to all who knew of its existence. To the chalky-skinned natives it was known as an abode of devils and of black magic; to such city dwellers, who had been reached by the long arm of Bingord, it was a fortress of ultra-modern defenses, where fiendish devices of torture were used on the hapless victims of the bandit.

It was Bingord who fought the coming of the nickel-cobalt roadway, for well he knew that his dominance of the three provinces was at stake. And, by his reign of terror in the dryland villages, he had thus far succeeded in maintaining the stubborn resistance of the natives.

The raid on Tos-tanor and the rioting there had been a sample of Bingord's methods. Only here there was a deeper motive. Heretofore all representatives of the Union Roadways System had been politicians or engineers from the cities and consequently were easy to deal with. Now it was a different matter with the aggressive humans from the green star, the earth, in his dominion. And the young Gordon had learned too much during the days of his sojourn in the drylands. That was one thing. Still more important to Bingord than this was his value as a hostage and a bait for the luring of the entire party of Terrestrians to destruction. Thus had the attack on Tos-tanor been planned and timed. Its double purpose was plainly apparent.

In the deliberations of the Council of Risapar the true facts were ignored, Zeranu declared. Perhaps, even, the councillors had not been able to learn of the real conditions, since the drylanders are stubborn and close-mouthed. And properly so, for they are too fearful of the might and the magic of Bingord to risk a betrayal. Zeranu, dwelling amongst them for nearly a generation, had learned these things. He *knew* but was not afraid.

Only to rid the provinces of the scourge of this Bingord and all would be well, he averred. No further difficulties then with the natives. Most gladly, instead, they would hail the men from the green star as their deliverers. And they would be most reasonable in permitting the construction of the long-fought extension of the roadway through their territory.

Bob Coleman believed the ancient Martian. And, believing, he was appalled at the prospect. Chill forbodings assailed him as he came to realize fully the position of his younger brother.

"What makes you believe we can succeed against this terror of the drylands?" he asked his informant, when they had ridden for some time in silence.

"Your kind never fail." There was quiet confidence in Zeranu's reply. "Much more brave and strong as any Martian. More quick in brain also. You see."

"Hmph. Wish I were as sure of that as you are."

The first faint light of dawn was painting the sky when Bob called for a halt. They had ridden steadily and far. On such a ride the muscles of men not lately accustomed to the saddle become cramped and sore, their joints stiffened. Besides, the jikiris needed a rest—and water.

He slipped easily to the white sands, mindful of the fact that a Terrestrian must move lazily in this gravity that reduced his bodily weight by nearly two-thirds. Breathing deeply in the rare air which never fully satisfied earthly lungs, he stretched mightily. A steely glitter was in his blue-gray eyes as he looked out over the drylands and bleak lines came into his face with the compressing of his lips. No cheering prospect was presented by the view.

His men, weary but in good spirits, were rummaging in the packs for food and unslinging water bags from the jikiris. Danny Matthews' broad grin was in evidence as the daylight revealed him as something more than a shadowy form. His gaze was upon Zeranu, admiringly.

"The old boy sure can spin a yard," he said to Bob in English.

"Did you hear it all?"

"Mostly, I guess. And he gave me the creeps sometimes."

"What do you think, Danny?"

"I think we've got a large order—smoking out this Bingord. And I hope Zeranu's on the level. If he isn't we're sunk."

Their guide broke forth in a torrent of expostulation, waving his skinny arms and shaking his head until the long hair nearly hid his wrinkled, leathery countenance. "Zeranu spik your Inglis same like Sol-ido," he clucked.

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* So-called by Terrestrians because it is the brightest star in the constellation *Canis Major*, the "Greater Dog" of the heavens. Sirius is likewise the brightest star in the heavens and one of the nearest. Its distance is 2.7 parsecs or 8.8 light years (51 million million miles). Its mass has been determined by Kepler as 2.4 times that of the sun. Its spectrum indicates a surface temperature of 10,000 degrees as against the sun's 6,000. Its light is correspondingly whiter.

"And Zeranu not lie. Take you to Bingord now—before half day. You see."

"Inglis!" Danny grinned, "Better stick to Sol-ido, old boy."

"Lay off of him," growled Bob, "This is a real jam we're in; can't you get it through your head? Gordon's out there and——"

"I know, Bob. Sorry." The young engineer sobered instantly. Then, turning to the muttering guide—"Don't mind me, Zeranu. I'm always this way. But I'll be Johnny-on-the-spot when you show us where to find this bad man of the desert."

Zeranu blinked rapidly, understanding only a part of the speech. But his swarthy face relaxed once more into its accustomed impassivity. No one, not even an outcast Martian, could long harbor resentment against Danny Matthews.

After that came the business of eating and of apportioning the limited allowance of water to man and beast. Conversation was lacking as the meal was wolfed down. And, in a very short time the jikiri train was again in motion.

The character of the drylands changed as the tireless little animals plodded onward. Where at first there had been only the level monotony of the powdery white sands, outcroppings of volcanic rock now showed here and there. And a range of low hills loomed up before them. Within three hours of daybreak they had left the sandy plain far behind and the jikiris were picking their way sure-footedly through a torn and broken area where their progress was impeded by tumbled masses of spongy stone, bleached to chalky whiteness as had been the sands.

Coming out through a narrow gorge they saw a fertile spot. A tiny dryland village nestling amidst the dwarfed purple brush that marked the location of a water hole.

"Not far now," Zeranu grunted when they neared the settlement. "Fill water bags here, Boss. Then go to Bingord—quick."

A group of excited villagers greeted them when they rode in among the collection of rude huts. In their midst lay a horribly seared and mutilated native, his body mourned over by a sobbing woman. Zeranu dismounted and chattered earnestly with a red-bearded drylander who seemed to be the spokesman of his clan.

"Him say," he translated rapidly to Bob, "Bingord here not long after sun come up. With five, six, nine men. And the young Gordon bleeding. Tied up on jikiri's back. Man on ground here try help him escape. Bingord slay foolish drylander before go. Beat the young Gordon with pistol until fall down. So!"

Wrathfully Zeranu switched from the Sol-ido into a gibbering of Martian invective.

Slowly the color drained from Bob's face, leaving it an ashy gray. His lean jaw tightened in grim lines. But no words came from his thin lips; he only beckoned to his men to make haste at the water hole.

CHAPTER III

Repulse

FROM what Zeranu had said, Bingord's stronghold was to be found in a most inaccessible location. It was a walled village on an elevated site, with the only approach across broken lava beds that were almost impassable. And certainly, as they progressed, the way was becoming increasingly difficult. The jikiri train, at times, skirted the crumbling rims of yawning chasms where the slip of a hoof meant swift death to beast and rider. At other times the riders were forced to dismount and lead their tired animals through tortuous, arched-over crevasses that hardly provided sufficient clearance for the packs.

Fervently Bob wished for a plane or a helocopter. An impossible wish here on the red planet, where the nickel-cobalt roadways were the sole arteries of rapid transportation. Not that the dwellers of the canal cities had progressed insufficiently along scientific lines to develop air travel; it was merely that ships of the air were at a great disadvantage due to the rarity of the atmosphere and the extreme thinness of the layer surrounding the globe. An unsound proposition economically, for huge wing-surface and tremendous power would be required in climbing only a few hundred feet. Hence the roadways of Mars.

Still he could not but think of the advantage that would be theirs now, had they a swift plane at their disposal. Digging his unspurred heels into the flanks of his jikiri, he pulled up beside Zeranu. More than two hours had passed since they left the water hole back there and he had an idea they were nearing their destination.

"Are we nearly there?" he asked the guide.

For answer Zeranu extended a skinny forefinger. From behind a low ridge not a thousand yards away a column of black smoke curled skyward. Unmistakable signs of human habitation.

The sight gave Bob pause. "Pretty close by," he muttered. "Can we approach without being seen?"

"Yes, boss, Zeranu know how. Around end of hill can see place. But we go in cracks of stone, so Bingord not can see us. Wait."

"Hm. How many men in the band?"

"Not many. Maybe twenty, maybe fifty—who knows?" The Martian shrugged his scrawny shoulders. To these superior beings from the green star it should make little difference what the odds were.

They came through a defile that split the end of the ridge. A well-worn path branched off here in the direction of the bandit's lair, but Zeranu drove his jikiri down into a dark crevasse that went deep into the spongy lava bed in the opposite direction. For an instant Bob caught a glimpse of the stronghold, an impregnable position, it seemed, on a rocky prominence not more than a half mile distant.

"Not so good," commented Danny Matthews, "How in the devil we're going to get to them I don't know."

"Zeranu know." The Martian was unfeazed by the prospect. "We come in very close so can shoot. They not see us. Zeranu know way."

"I hope so." Danny was dubious. "What's your plan, Bob?"

"Well, we can't use the torpedo projectors on account of Gordon. We could wipe them out from here if they didn't have him. Guess our best bet is to use the tear gas if we can get near enough to toss our grenades. That's my idea, at least."

"We get close," Zeranu assured them, "Bingord not can find us in cracks of stone. Zeranu know every crack."

"The old boy's been scouting around here for years," chuckled Danny. "Guess we can trust him."

They were in a veritable labyrinth of fissures, some rising nearly to the surface and others dropping rapidly

to depths of fifty feet or more. At one point Bob was able to raise himself and look out over the lava bed. He saw that they had covered more than half the distance to the stronghold.

As he dropped back into his saddle a great voice rolled out over the valley. A Brobdingnagian voice, that reverberated through the passages and smote upon their eardrums with deafening power. A voice that was hideously raucous—metallic. And it brought understandable words to the astounded hearers. Words in the Sol-ido tongue.

"Make haste, Americans," it sneered thunderously, "Bingord awaits your coming with keen anticipation."

There was silence then save for the echoes that came back from the low hills. Zeranu wheeled in his saddle and a twisted grin contorted his narrow features.

"Drylanders say this magic," he cackled. "But we know it machine talk of Bingord. Big horn make noise but not scare us. So?"

"It means we've been seen though." Bub pulled up his jikiri and stood in the saddle, drawing himself to the edge of the crevasse. No sign of life was there at the bandit's fortress.

He had known instantly that the great voice was a human one, enormously amplified by electric means. Nevertheless it had awed him by its vastness and had silenced his men; it was no wonder the drylanders shunned this place. And most disturbing was the knowledge it brought that the enemy knew of their approach, and the certainty that Bingord was equipped with the most modern of devices.

Zeranu's expression was not as confident as it had been. "Maybe they come out with flame pistols," he offered.

"Or cannons," grunted Danny Matthews. "Afraid we'll have to rush the joint, Bob."

"That would be suicide. No Dan, we'll go on and try the gas."

"How about loading a torpedo with the stuff and shooting it over?"

"We could do that." Bob pondered this as they pushed forward. "But I'd be afraid of it, Danny. The bursting charge would have to be quite powerful and we don't know about Gordon. Might hit him."

The way dropped sharply into a roofed cavern where they were in near darkness.

"Come close now," whispered Zeranu, "When come out of cave be right under wall. Throw gas bombs then."

"All right, fellows," Bob called out softly, "All get set with a grenade apiece. When I give the word, we'll fling them over the wall. Then rush the entrance. They'll be blinded and helpless."

"So?" Startlingly, the great voice of the amplifier echoed in the cavern. "Come out into the light, men from the green star, that Bingord may welcome you fittingly."

Whereupon the voice laughed hideously—mockingly.

Zeranu's mount backed frantically into Bob's and there was an instant confusion in the cavern. The jikiris yapped their alarm and the oaths of the Americans mingled with their mouthings.

"Come on!" yelled Bob. "He's trying to scare us off like a pack of ignorant drylanders. Come on—one, two, thr——"

At the count of three he was in the open air, his arm drawn back with the egg-shaped grenade gripped tightly in his fingers. Danny and Zeranu were off their jikiris and at his side in a flash. The others were not far behind. And over them loomed the smooth wall of the bandit's stronghold.

But the gas bombs were never thrown. Zeranu's shrill yelp cut the air like a knife and he dropped the grenade Bob had handed to him.

"Hells bells!" roared Danny Matthews. "It's hot." His own missile flung out in a puerile arc, sputtering to a white heat as it left his hand.

Too astonished to release his grenade at once, Bob suffered severe burns before opening his fingers. And he watched in amazement as the metal casing with its charge of ethyl iodoacetate disintegrated into complete nothingness at his feet.*

"Lord!" he groaned, "They're broadcasting some energy that disrupts the atoms. Go back, fellows, back into the cavern!"

They had not heeded his command and were crowding into the semi-darkness. Shouts and curses echoed in the enclosure. His men were as demoralized as were the jikiris.

And over all boomed the mighty laughter of Bingord's amplifier.

"What's wrong with you fellows?" Bob roared, recovering his equanimity and boiling with sudden wild rage, "Are you afraid of these cute tricks? Come on now—after me! We'll rush the gates with flame pistols."

The butt of his weapon was in his hand as he rushed out in to the open. Zeranu tried to restrain him but his own men streamed out after him, anxious to do battle and heedless of the consequences.

But no enemy appeared at the double gate. There was no living being in sight on which to direct the spouting white flame of their weapons. A huge rusty lock secured the entrance and Bob was struck with an idea at the sight of it.

"All together, fellows," he whispered hoarsely, "Aim at the lock. We'll melt it away."

Nine flame pistols were raised and nine incandescent blasts shot forth. But they never reached their mark for the disintegrating force smote out from behind the wall. Soundlessly, invisibly, yet heating the metal of the weapons so swiftly that flesh was seared in the discarding of them. Some of the pistols vanished in puffs of vapor ere they reached the ground. And again came the thunderous laughter of the bandit's amplifiers.

"Devil take him!" shouted Bob. "He beats us at every move. Why doesn't he come out and fight?"

He raised his voice to the blank wall in furious challenge, but the maniacal laughter of the giant voice drowned out his words.

"Better go back and talk it over," Danny suggested, ruefully nursing a scorched palm. "This Bingord knows a few tricks. He's too many for us—so far."

"Yes," Bob admitted grudgingly, "We'll have to figure out a bit of strategy, I guess."

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* Ethyl iodoacetate, $CH_2ICOOC_2H_5$ a lachrymator developed by terrestrial chemists early in the preceding century. This gas, in the "World War" of 1914 to 1918, was found superior to xylyl bromide, $CH_3C_6H_4CH_2Br$, in that the approximate concentration required to incapacitate a man by lachrymation and coughing was one part in five million as compared with the one part in two million of the latter. In greater concentration, which is to say of the order of one part in 50,000, the breathing of Ethyl iodoacetate for one or two minutes will cause actual and lasting damage to the lungs. Such so-called "tear" gases are extremely effective against a massed enemy since, singly and collectively, he is rendered helpless so soon as to be unable either to attack or to defend himself.

They retired to the cavern where Zeranu awaited them with a long face.

"Zeranu try to tell you," he accused Bob. "No good for go out now. Bingord got seeing machine somewhere—know what we do. Must wait for dark. Then throw gas bombs."

"Nothing doing." Chagrined though he was by this first failure, Bob Coleman had been goaded to stubborn determination by the sardonic, giant voice that was everywhere about them. He was in no mood to consider further delay. And his men were of like mind. "We'll have to attack at several points," he growled, "That's the only way we can put this across. What's your idea, Danny?"

"Same as yours. And, listen: suppose I take six of the men and the animals and strike out through the crevasses to make an attack from the rear. They'll think we've all gone. You wait here and when you hear the explosion of a torpedo, you can charge the gates. I'll fire on the base of the wall back there with a projector and it'll probably blow a hole through it at the same time. We can——"

"A good idea, Danny. Let's go."

"No, no!" their guide expostulated shrilly, "Zeranu not know way to rear. Drylanders say much black magic that way. You not live to reach back wall. Must think other way to do."

"Nonsense." For the first time Bob was impatient with the old outcast. "You're believing some of this native superstition. We'll break up as Danny suggests."

"Can't do," wailed Zeranu, "Lose men, animals, everything. You see. Not black magic but machines of Bingord kill. Can't do."

"Shut up!" Bob roared at the cringing Martian. Then swiftly to his men—"You Phillips and Morey—stay here with Zeranu and me. And here, Danny—just a second—leave us grenades and new flame pistols. You take the rest. Take all the jikiris and make as much noise as you want getting started. The four of us here will keep hidden until we hear your shot. Better make it two torpedoes in quick succession so we'll be sure it's you. Beat it now."

In the half light Zeranu's leathery countenance was a tragic mask. But he forebore the offering of further objection. Gleefully singing out his orders, Danny Matthews led his little party off through a branching passageway that paralleled the wall.

CHAPTER IV

Black Magic

THE four men, huddled into the darkest recess of the cavern, kept strict silence while they waited breathlessly for Danny's signal. A half hour passed without sound, when Bob could stand it no longer

"Must have reached it by this time," he muttered huskily.

"Hush—maybe hearing machine in cave," Zeranu whispered in his ear, "Not time yet—pretty soon."

Three quarters of an hour and still no signal. The silence was uncanny; there was not even the faintest sound from behind the wall of the fortress. Bob fidgeted but held his peace.

One hour. Bob Coleman held his watch before him now and its illuminated dial was an eery flickering thing in the darkness as it fluttered in his trembling fingers. The strain was telling.

And then a ghastly sound came to their ears. The shriek of a man in mortal agony. Whether it came from within the wall or from the rear, they could not determine. But it was the voice of an American, that was certain. And immediately after it came the crazy laughter of the blasting amplifiers.

"That settles it." Bob leaped to his feet and his heart was heavy within him. "They've got Danny and the rest," he said tonelessly. "They must have, or we'd have heard those torpedoes. Come on fellows, we'll have to go after them."

He was thankful that Zeranu had no "I told you so," with which to reprove him. Instead, the scrawny outcast clucked sympathetically and ducked into the branch passage after him. Phillips and Morey spoke no word as they followed.

The passage widened out and soon the pale green of the sky was above them. This was a sizeable gorge they were traversing and the going here was easier than they had found it since entering the lava beds. They had gone but a little way when the nature of the spongy walls changed; they smoothed out, as if cut through the lava by the hand of man. And the depth of this channel was not more than ten feet.

Presently they entered a circular well of similar depth. And from it radiated no less than a dozen cleanly cut passages. They were in a cleverly conceived maze of human—or inhuman—origin.

From this point they could see the wall of the stronghold. And it still presented a blank expanse of smooth stone. Forbidding. Unmarked by the presence or nearness of any living thing.

"This what Bingord want us to do," Zeranu observed sagely, "Not come out to fight because expect him lead us here where most good for he self. Not good for we."

"Looks like you're right," Bob admitted ruefully, "And I'll be damned if I know which way to go now."

"Why not call out to Danny?" whispered the lad called Morey, "The bandits probably know we're here anyway."

It was not necessary to follow the suggestion however, because a second hideous shriek rent the air at that instant. And there was no mistaking the direction from which the sound came, for it rang out from one of the smooth passages as if carried through a speaking tube.

Without hesitation Bob dove into the smooth-walled channel, and the others were hard on his heels. A bedlam of frightened sound was in their ears as they ran. Blasting laughter that beat at the eardrums and smote their cheeks with a distinct sensation of vibration of the air around them.

Abruptly they debouched into a walled-in rectangle. And the sight that greeted them sent Bob Coleman back on his heels.

A faint mist of rosy hue was in this place, a mist that lay in two pulsating strata, one shoulder high, the other close to the ground. Danny and the rest of the party were here, but scarcely recognizable in the frenzy that had come upon them. The jikiris were stamping and pawing frantically, without uttering a single plaintive yap. And two of the men were down, bleeding from horrible wounds. They had been trampled by the mad jikiris, or had killed themselves in the insanity that was brought on by some diabolical energy with

which Bingord was charging the whole of the area.

Danny Matthews, his face bloated to incredible size and his eyes popping from their sockets, was babbling hoarsely, almost inaudibly. Pointing to the wall of the bandit's stronghold. Unconsciously, Bob's gaze followed his finger and he thought he saw a misty shape atop the wall. A huge shadowy form; weaving in the weak sunlight. He rubbed his eyes and it had vanished.

Another of the men—Glenn Thomas—went stark mad and staggered to one of the jikiris, beating at the round head of the bucking animal with clubbed flame pistol. Bob went after him, bellowing. Dragged him from the foam-flecked creature before he had killed it.

And then he too was smitten by the weird force that had the rest in its throes. His vision was distorted and there came a pounding at the innermost cells of his brain that drove all sane thought from his mind. Up there on the wall was a monstrous grinning figure, swaying in the breeze. A solid figure, of flesh and blood, yet fully fifty feet tall, a colossal reproduction of the bearded bandit, Bingord, in the flesh, grinning evilly. Gloating. Bob tried to cry out, but no sound came from his parched lips.

One of the jikiris flung itself against him in its frenzy, catapulting him to the wall of the arena. The shock cleared his brain slightly. And suddenly he knew that this energy emanated from the very walls about them. He had seen two metal strips there, one close to the ground, the other shoulder high. Desperately he fought to retain his senses as the radiation beat at him anew*

Groping—for the rosy mist was thickening—he found his way to Danny. Shook him mightily. But Danny only stared with those popping eyes, and gibbered through swollen lips, with horrible sounds that scarcely could be heard. Great purple veins stood out in his forehead.

Another shriek rang out—and another. Two of the men were in violent conflict, battering out each other's brains with their pistol butts, wallowing in their own blood as they rolled over and over on the hard ground. And the laughter thundered from the widespread mouth of that inhuman giant top the fortress wall.

Bob must have gone completely mad for a moment after that, for the next he knew he had wrestled a jikiri into submission and was pawing through its pack for a torpedo projector. Insane laughter would have come from his lips had he been able to open them. And then he was fondling the long slim tube of the projector, withdrawing the plug of the generating mechanism in the stock. The whir of the generator inside was a welcome sound above the roaring that was in his ears.

Crazily he backed to the wall and leveled the weapon at the impossible figure of Bingord. The colossus swayed and grinned as before, but now its bloodshot eyes were directed at the puny being down there, who dared to think he might prevail against his might. In a daze, Bob saw Zeranu endeavoring to scale the wall; saw him batter his head against the unyielding stone in a frenzy. He hardly knew he had pulled the release of the torpedo projector; would not have known it had not the spang of its propelling ray penetrated his consciousness. And the torpedo, with its deadly charge of ultranite, sped on *through* the monster on the wall. Out past the rosy mist he saw its leisurely arc as it rose and fell into the lava bed, far beyond the stronghold of the bandits. The sound of a terrific explosion, harmlessly expended, and the raucous laughter of the unharmed monster on the wall were all the reward he had for his pains*

The drylanders were right. This *was* a place of black magic, after all. A jikiri, enormously enlarged in Bob's vision, charged him and drove him against the wall. With arms flailing mechanically but effectively, he flung the crazed animal off.

Behind him there came a brilliant flash and the torpedo projector was almost wrenched from his grasp. It had contacted with the two horizontal strips of metal along the wall and the short circuit heated the tube noticeably. A second flash followed as he pulled the weapon away, but his senses were too far gone to permit of the significance of the phenomenon impressing him at the time.

Looking out beyond the pulsating rosiness of the mist, he saw that a new and different figure had appeared on the wall of the fortress. As huge as the figure of Bingord had been and apparently as real. But this one—it was incredible—this was Gordon! Gordon Coleman, tied fast to a metal grid, his face contorted in unspeakable agony. They were torturing him—torturing him—torturing Gordon by some devilish means that involved a flashing display of pyrotechnics which penetrated his body in emanations from the latticed metal behind.

Something snapped then in Bob's harrowed brain. He flung himself at the wall of the pit, deliberately shortcircuiting the two glowing strips with the tube of his projector. As before, there was the violent flash and the tube became warm in his hands. He released his grip of it and it clung there, heating rapidly to a cherry red as he watched stupidly. Instantly it seemed that his mind was clearing. Slowly and painfully, to be sure, but he *had* remembered that incident of the first short circuit. He *had* been able to figure out for himself that in this manner the effectiveness of the maddening energy might be nullified.

A great roaring as of rushing waters was in his ears as he slid to the ground. The utter blankness of insensibility swooped down over him.

Darkness had fallen when Bob awoke. For a long time he lay on the hard ground, trying to remember. A dull glow beside him drew his attention and he turned his head to stare. It was the tube of his projector, still red hot from the power which flowed through its slim length. Memory returned with a rush and he staggered to his feet.

Dim forms were there in the pit, some of them corpses, some living creatures. Stumbling from one to the other he quickly found that Zeranu was alive, with his senses just returning, and Danny Matthews

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* Human nerve currents and the functionings of brain cells are known to be electrical in nature. With the oscillograph, an exceedingly delicate instrument for the measurement and graphical recording of minute and swiftly fluctuating currents, they have been found to be uni-directional and of interrupted or oscillating voltage characteristics according to the functions performed. Bingord's radiations were designed diabolically to counteract or to alter in action both sensory and motor impulses of the nervous system and to partially paralyze certain regions of the brain to produce the illusions and the insane actions of those subjected to them. Continued exposure to the radiations brought death by complete destruction of the brain cells.

* It was learned later that the monstrous figure on the wall was not altogether an illusion of their tortured brains. Bingord's apparatus included clever adaptations of television and sound projectors. The fifty foot images were produced as exceedingly lifelike representations by utilizing a great jet of conducting vapor, in the particles of which enormously enlarged three-dimensional figures were built up from the impulses of special television scanning equipment.

too, for which Bob was fervently thankful. Phillips, Morey, Donaldson—six of them altogether had survived, whereas ten had come into this place of horror. And the jikiris all were stark and rigid in death.

Sounds of revelry came from beyond the wall of the stronghold. Bingord, thinking he had destroyed them all, was celebrating.

Grimly Bob was shaking Danny into complete wakefulness.

"What the devil? Where am I?" His friend sat up, weakly swaying, surveying the hazy form before him with incredulous eyes. "Oh, it's you, Bob." Suddenly he got to his feet.

"Come on, Dan, snap out of it. There's work to be done." Bob still gripped his arms, continuing the shaking process. "We've got to storm Bingord's gates and get Gordon," he grated, "Dead or alive, we'll get him. Hear me? Understand?"

"Sure I hear. Let go my arms." Danny was himself once more.

"Stout fellow: listen Danny. There are six of us yet, including Zeranu. The jikiris couldn't hold out. But there are flame pistols and torpedo projectors galore. And Bingord thinking we're all out of the picture. There'll be no look-out."

"Right-o!" Alert as if nothing out of the ordinary had occurred, Danny Matthews proceeded to the task of reviving Donaldson.

Morey and Phillips, having been exposed to the energies for a shorter time, were already on their feet. And Zeranu, shrilling his rage, was at Bob's side.

"Cut out heart from this Bingord," he cackled, "Zeranu do it, boss. You see. We go now?"

"Yes, but you're to leave Bingord to me. You hear? Understand?" Bob remembered that the Martian had an old score to settle with the bandit chief. But he had a fresh one himself. If Gordon——?

"All set." Danny's cheerful voice came out of the darkness.

Searching the packs of the dead jikiris, they soon provided themselves with weapons. For once, Zeranu was uncommunicative.

This time they came boldly out into the open. With earthly muscles accustomed to a bodily weight nearly three times as great as here in the gravity of the red planet, the Terrestrians had no difficulty in vaulting the ten foot wall of the pit. Reaching down then into the blackness, Bob and Danny drew Zeranu up after them.

Above them reared the wall of the stronghold. They skirted its base and made for the great double gate at the front. Ribald laughed and hoarse shouts of merriment came from within, but no devastating energies struck out at the attackers. Their approach was unseen, unsuspected.

CHAPTER V

Within the Gates

THE huge lock melted swiftly away under the combined attack of a half dozen flame pistols. Before its liquid metal had ceased dripping Bob was pushing through the gates.

"Remember, Zeranu," he warned the chortling outcast, "Bingord is *my* meat. I'll tend to him in my own way."

The wizened Martian stopped his exultant chatter, but a crafty light was in his beady eyes.

Danny and the others slipped through after them and stood within the gates, their eyes widening at the sight presented in the open area before them.

"Good Lord!" gasped Bob, his fingers tightening on the butt of his flame pistol, "Look—look what the devil is doing to Gordon."

The younger Coleman was a sagging, half naked figure, strapped to a vertical metal grid that glowed with eery flickerings of the fiendish energy with which it was charged. Bloody sweat oozed from every pore of his bared chest and stood out on his brow in great drops. But his gaze was steady, fearless.

Bingord stood before him, reeling drunkenly. On his ugly head was a metal cap from which cables led to the grid. Massed against a long dormitory-like building at the rear were Bingord's men, probably sixty or seventy of them. Chulco, the intoxicant, was flowing freely and its fiery potency had already laid out a number of the revellers in the deep coma which follows upon the first mad exhilaration of the vicious Martian distillate. Others of them were rapidly approaching the same condition. And the entire scene was lighted to daylight brilliancy by floodlights mounted on the great wall.

Strangest of all were the antics of Bingord. He capered before his sweating victim like a maniac, snarling wrathful invectives, quite obviously beside himself with a rage that was inflamed by the heat of the chulco he had imbibed.

"You still defy me, do you?" he bellowed, "Still the braggart Terrestrian holds out against the might of Bingord. Very well, you shall see the horrible fate to which your brother was lured in the pit. After that I shall increase the power. To the limit."

The floodlights dimmed as he spoke. And then, amazingly, it was as if the entire enclosure had vanished from sight. Before those who watched was the pit of the rosy mists, dim-lit and ghastly with the blood that spattered its walls. Four bodies were lying sprawled there, bodies of men and twelve animals, twisted and broken—their jikiris, with open packs spilling their contents. It was a marvelous demonstration of television—and something besides.

Bingord's wild yell clove the night air and the floodlights came abruptly to full brilliance. Aghast, the bandit stood there staring. "They're gone," he shrieked, "Imps of the canals! Some have escaped it. To arms, men, to arms. Make ready to repel——"

And then he had swung about and faced the little party by the gate. A flame pistol was in his hand as by magic and, crackling spitefully, it spouted incandescence. But, quick as he had been, Bob Coleman was quicker. And his own searing ray had severed the bandit's pistol hand at the wrist ere that other flame found its mark. Dropping to the ground, he fired again and Bingord crumpled and fell as his right leg was blasted away at the knee. Screaming horribly, the bandit chief called upon his men to avenge him.

Pandemonium reigned amongst the revellers. Many of them were helpless, and many others in so advanced a state of intoxication as to be unable to raise their weapons. But a dozen white flames flicked out from across the rectangle and young Donaldson cried out chokingly and then lay still, charred and smouldering

heap. Bob's men were on their faces now, firing rapidly into the howling bandit crew. And each spouting flame carried its message of certain death to a bandit.

"Give 'em a torpedo, Danny," grunted Bob, crawling out ahead.

Unslinging his projector, Dan Matthews rose to his knees. The violent detonation of the ultranite torpedo across the court came almost simultaneously with the spang of its propelling ray. Mangled bodies hurtled skyward over there. Stones, débris, and twisted steel girders that flung upward and rained down over the area. And the low building crumpled in a mass of ruins.

No more crackling flame darted out at the attackers, for the few surviving bandits were utterly demoralized; they were shrieking in horrible fear of the Terrestrian high explosive, scrambling for cover and making desperate efforts to scale their own wall. Only a few escaped that way, however, as the yelling Americans, with Zeranau, an avenging demon, in their midst charged them with flame pistols roaring.

Seeing that his men were well able to finish the job without him, Bob ran to the grid where Gordon was bound. The younger man's head had dropped to his chest and he was all but unconscious as Bob slashed away the straps that held him fast to the glowing latticework.

"What has he done to you, boy?" asked Bob, unmindful of the stabbing pains the grid's weird energy sent through his body, "If he has killed you I'll burn him to a cinder on his own torture rack."

"I'll be all right." Gordon smiled weakly as he slipped to the ground with the loosing of the final bond. "But it was a tough time. The energy of the grid—for hours, and the mental torture. Bob, the images on the wall were only projections on a cloud of vapor—but this other thing—that cap on his head. Mental images sent out from his vile mind. Monsters in the air that I had to fight. I *knew* they were unreal but I couldn't help fighting.* In another moment I'd have been a raving maniac. That's what he wanted. But we licked him, Bob . . . you licked him . . .I . . ."

Gordon Coleman could speak no more; he had fainted. Bob saw that the bandage had been torn from his head, showing a recently stitched wound across cheek and scalp—an ugly wound.

"How'd he get this?" he demanded of Bingord, who lay moaning close by, "You did it, I suppose."

The bandit compressed his lips and even the moaning stopped. An implacable hatred was in his yellow eyes.

"Him did it, yes." Zeranu had come from the last of the fighting and he spurned the huge bulk of the bandit with his foot. "Him start try kill Gordon in Tos-tanor. Before you come. But the young Gordon beat him so he run away. Have not his men that time—Bingord not. That why he come back. Why he hate the young Gordon."

"Yeah? Leave him alone, Zeranu." Bob lowered his brother's dark head gently to the ground and turned savagely on the bandit.

"All right, you!" he grated, yanking him upright and flinging his maimed body toward the glowing grid, "You're going to get a taste of your own medicine."

Bingord struck out with his one good arm and kicked mightily with the remaining leg. But he was helpless in the powerful arms of the earthman. In a trice he was bound securely where Gordon had been and he squirmed and shrieked as the energies of his own devilish mechanism shot him through and through.

Bob had snatched the metal cap from his head and now examined it curiously. The cables, he saw, entered a control box that was set on a small pedestal. From thence they were connected to the metal grid. A rheostat was in the box, its lever set in mid-position. Experimentally, Bob moved the arm forward. Bingord screamed frightfully as the glow from the latticework brightened.

"Ha!" Don't like it so well yourself, do you?" Bob grinned as he increased the power by another notch. From somewhere underneath his feet there was the whining protest of a generator as it took the additional load.

Danny Matthews and the others had gathered round and were watching the procedure. Bingord was begging now, cravenly, and bloody sweat oozed from his pores.

Bob adjusted the metal cap over his own head and examined the levers in the control box once more. He opened a switch and the floodlights dimmed.

Bingord shrieked anew.

"Afraid of this mental torture of yours, eh?" Bob sneered, "The terror of the drylands is a coward at heart."

He set his mind to the picturing of his own dream of the roadway across the barren lands. And the wall of the stronghold dissolved away before them. Out there on the lava beds was a gleaming stretch of tower-supported roadway, extending to the horizon in the one direction and disappearing through a rift in the hills in the other. Many speeding ronsals were passing along its length in both directions. A prosperous village rose up as by magic from the lava beds. Water flowed in the fissures and the bright purple of luxurious vegetation carpeted the streets of the village and children played before the doorsteps of neat dwellings. A pleasing vision of the future.

"That's what you've been fighting, Bingord," Bob exulted, "But you've lost. You're through—understand? Even if I let you live, you're through. Licked."

"Hrrgh—this not torture," Zeranu rasped, "Let Martian show you."

He snatched the cap from Bob's head and fitted it to his own.

"Let him do it," begged Danny as the vision of the roadways vanished and Bob sprang at the outcast, "He'll do it right."

"Not a bad idea at that." Bob Coleman subsided.

The vengeful Martian leaped at the bandit, striking his drooping head with the flat of his hand. "You see now," he yelped, "Even if shut eyes brain see. Remember Zeranu. Remember Cleda."

Once more the fortress wall seemed to melt away in the night. By the glow of the torture grid they could see the fierce glitter in the beady eyes of Zeranu, as he thrust his withered face close to Bingord's red-streaked beard.

And then there was enacted before them the tragedy of a generation ago—a scene materialized out of the

* This was accomplished by Bingord's use of a further development of the sound-vision projectors. By picking up the electrical impulses from the thinking cells of the brain and amplifying them before they were passed to the projectors, it was possible to produce an uncannily lifelike representation of the *thoughts* of the operator of the mechanism. He needed merely to concentrate on some real or imagined scene and it would be reproduced in realistic action and color with all the accompanying sounds as conceived in the mind of the operator. In this case the regular mechanisms of the televisor were replaced by the thought impulse apparatus.

past. On the outskirts of a canal city there stood a neat cottage before which a slender and remarkably beautiful, golden-skinned Martian woman stood. Her eyes were alight with expectation as she shaded them with her hand and looked down the pathway as if expecting the coming of a dear one.

"Remember Cleda, Bingord!" Zeranu's voice was awful as it came out of the shadows. "She waiting for me, then."

The bandit gurgled stark gibberish in his terror. There was the sharp sound of the blow as Zeranu struck him again.

And in the scene pictured so vividly out of the memory of Zeranu, as his mental impulses were converted into light images by the machine, there appeared a group of riders. Coming in from the drylands, they were, and at their head was a great bearded half breed, this same Bingord, a mere youth then but as evil of countenance as now.

The woman cried out in alarm and ran for the door of the house. But the bandit chief had slipped from his jikiri and intercepted her. She was in his arms then, beating at his broad chest with puny fists. And the Bingord of the past laughed raucously, a miniature of the titanic guffaw of his amplifiers of the present. Once, when her clothing was almost torn from her gleaming body, the woman broke free and a stone from the path was in her hands. She flung it with all her strength and it caught the bandit fairly between the eyes, momentarily stunning him and cutting a gash in his forehead. With a bellow of rage he rushed upon her, forgetting his lust in the fury that came to replace it. A knife rose flashing and fell. Again and again until the woman was a pitiful, bleeding corpse at his feet.

"Cleda!" The Americans were aghast at the horror of the thing as the vision melted away and Zeranu's voice came out of the darkness. The old Martian had switched from the Sol-ido and was now screeching fluently in his own tongue. "It was thus you slew her, monster of the drylands. And so it is that Zeranu will avenge Cleda. Now!"

Bob reached for the switch in the control box and the floodlights flashed on blindingly.

At the torture grid Zeranu was a towering god of vengeance. Years seemed to have slipped from him as if by the magic of Bingord's machine. His right arm rose and fell as Bingord screamed. A curved blade that was in his hand, bright only when it flashed the first time, was dripping red now. With monotonous regularity it swung aloft and drove down long after the bandit's cries had ceased.

Presently the outcast, exhausted by his emotions, had dropped to his knees, spreading his scrawny arms wide and raising his face to the heavens, giving thanks to the ancient gods of Mars.

"And that," whispered Bob in awed tones, "is that."

Gordon Coleman, roused by the commotion, sat erect with an effort.

Instantly Bob was at his side, supporting him in his strong arms. "How do you feel now, boy?" he demanded anxiously, "Think you'll be all right again?"

"Surest thing." The game youngster lurched groggily to his feet and stood there tottering. But his color was returning and new strength slowly suffused his being. "Just give me a day or two and I'll be as good as new."

By the flashing courage of the black eyes Bob knew that he had spoken the truth. And the strong pulse under his exploring finger gave him double assurance.

Gordon turned to view the scene at the torture grid. Without feeling he regarded the bloody corpse that dangled there. But his gaze was one of understanding and approbation as it rested on the kneeling figure of Zeranu.

"Glad the old boy got him at last," he muttered.

"I guess that goes for me too," Bob admitted.

"And Bob." Gordon was suddenly enthusiastic. "Bob, we can start back for Tos-tanor tomorrow. The extension can go right ahead. We'll begin surveying as soon as we're there. There's nothing to hinder us now. We'll——"

Gordon's head nodded jerkily. He was falling asleep on his feet.

"Yeah, we'll do all those things. But first off you need some rest—and some care." Bob spoke softly at the last, seeing that Morpheus had definitely claimed the exhausted youngster. He lowered him gently to the ground and padded his own coat under his head.

Watching the two, Danny Matthews grinned broadly. They had won the game.

THE END

From Tales of Specks of Dust

The river tells its tales
To the bank its passes by;
And stones and pebbles hearken
Through days that dawn and darken.

The sand-grains huddle close,
And lie enwrapt, to hear
The whispered wonder stories
Of old forgotten glories.

Oft, the stones, the specks,
The grains of sand and dust,
'Tween meeting and dispersing,
Lie about, conversing.

"I come from the moon,"
Once cried a rugged mote;
"And I from yonder hill";
"And I from the beak of a duck";
"And I," upspoke another,
"Am part of a king's brother."

Each in turn unfolded
What he was and did,
And how he came to change
Into something strange.

As a hundred specks
Closely lay and chatted,
A river spray-drop spun
And made them into one.

. . . MAX KAUFMAN.

A caterpillar as mighty as a boa constrictor fed with crunching jaws while in the lake darted bloated water bugs more hideous and menacing than crocodiles.

The Shadow World

By Sophie Wenzel Ellis

IT is a well-known fact that sounds exist in the world around us that we cannot hear, because our auditory organs are attuned to sounds within a definite range. It is also true that certain ether waves which can be picked up with special instruments are not visible as colors to the naked eye. These things have been discovered to be true. Why, therefore, is the theory that there might be other things—and perhaps some life—about us that is still beyond our scope of vision and realization? Our new author gives us a story elaborating in a most unusual manner on this very subject.

Illustration by MOREY

A GIRL'S frightened scream rang from the gloomy old Salter house across the street.

Jack Fantom, who should have been at police headquarters gathering crime news for his paper, but who was waiting somewhat guiltily in the shadow of a giant willow oak for the meager privilege of seeing Annis Salter, with whom he had quarreled, stiffened to alarmed attention.

Screams often issued from that secretive pile of ancient bricks that hid the mysterious practices of old Angus Salter, one-time famed physicist, now called an eccentric, because of his fantastic theory on molecular cohesion, for the servants could not understand the curious happenings in the laboratory. But this was not a servant's scream. Annis Salter had come to keep house for her uncle, because the last servant had been frightened away.

Remembering, Jack dashed across the street. Before he reached the gate, the door opened and Annis herself came flying down the steps.

"Oh!" She stopped, raised her head with dignity, but her attempted coldness ended in a sob. "Jack, I'm glad to see you." She ran eagerly to him and ended their quarrel in a lingering handclasp. "It was dreadful! I laughed at the servants, but now it's happened to me."

"What?"

"Being touched by something I couldn't see. I was powdering my face in my room when—oh, it sounds silly—but something put its arm around me and kissed me; something I could feel but not see."

"Kissed you!" Jack's eyes were wrathful. "Maybe he slipped into the closet."

"No. There was nothing visible, I say. I was looking in the mirror. But I put out my hand and touched a hand, a man's hand. His breath was on my cheek——"

A scream and a struggle in the house behind cut off her voice.

"Annis! Annis!" came frantically.

"It's Uncle Angus, Jack! It's got him!"

Jack leaped into the house. He knew nearly every corner of it, for even before he had met Annis, he had been an occasional caller, when he helped Dr. Salter edit his papers for scientific journals.

In the hall leading to the laboratory, a mad sight halted his steps. Dr. Salter was struggling as though with an invisible foe.

"Jack! Help me!"

Jack, stopping four feet from the fighting man, whose bony, wrinkled right hand looked as though it grasped something, felt his face lashed by a feathery, winglike object. Almost paralyzed with loathing, he stood still until Dr. Salter again cried out.

"Can't you help me?"

Jack reached out cautiously and touched a body, warm, nude, invisible, but human. For another horror-stricken moment he hesitated, before giving all of his young strength to Dr. Salter's assistance. He found a throat he could not see, a trachea that breathed air. Madly his fingers closed around the throat that towered, invisible, half a foot above his own.

"Don't kill him!" warned Dr. Salter. "That's enough. Now help me get him to the laboratory. Be careful! Don't step on his wings."

During that unnatural struggle to the laboratory, Jack had time to collect his wits, and rising curiosity overcame some of his panic.

"What, in God's name, is this thing, doctor?"

"A man, the first I've got. He escaped from me. Lift him to the platform by that ultra-violet ray machine. Now for the anaesthetic. I want him quiet for a few minutes."

While Jack burned with curosity, and Annis stood

trembling and white-faced at the door, Dr. Salter anaesthetized the invisible being. When the last struggle had ceased, he swung the ultra-violet ray machine into focus and began fingering adjustments.

"What is it, uncle?" Annis asked tearfully.

"Get out of here, Annis!" snapped the scientist. "This is no place for a nervous girl."

"I wouldn't be nervous if you'd let me know what it's all about. It's the uncertainty that is horrible." Her pale, lovely face flushed with sudden anger. "If you don't let me know what you're doing in here and what it is that frightens all of us, I'll pack my clothes and leave tonight."

Dr. Salter's thin lips settled grimly. "All right, young woman. Step over here and scream your head off."

Annis obeyed with an evident summoning of bravery. Just as she approached the empty platform, Dr. Salter's skinny hand shot out toward the ultra-violet projector.

Annis screamed.

On the platform that had been bare a moment before, lay a young man so perfect of form and face that he looked like a sculptured and tinted statue. His only garment was a short kilt of silky white cloth. From his shoulders swept feathered wings, still ruffled from the combat.

"They're not—not natural, are they?" the girl pleaded.

"Yes. They're growing from his shoulders."

"What is he, Dr. Salter?" Jack managed to say.

"He's a man from the Shadow World, and he is visible now because you're looking at him under concentrated ultra-violet light. See?"

He pressed a button, and the winged man disappeared; pressed it again, and he reappeared.

"He is invisible because the human eye does not register light that lies beyond the red and violet of the optical spectrum. The beings of the Shadow World reflect to the eye only the invisible ultra-violet rays, until their bodies are bathed in concentrated ultra-violet rays accompanying color rays. The penetrating ultra-violet rays literally unload the color rays that have traveled with them upon the surface, and the invisible being becomes visible."

"You said the Shadow World?" Annis exclaimed.

"Yes, my dear. A world as real as this, made up of matter exactly like ours, but to us as invisible as air and as intangible as the electromagnetic waves passing through your body."

"You don't mean that winged being there is intangible!"

"He was intangible until I compressed the molecules of his body to our earthly substance and size. Before that he was a vast, frail, invisible form."

"You mean, Dr. Salter," Jack said, "that you have actually been making experiments in changing molecular cohesion without altering form or substance or destroying life?"

"Something like that. I've known of the Shadow World for years, and dared hint of it subtly in my papers, as you know. And I knew that when I conquered molecular cohesion—the amplification and condensation of the space between the molecular bricks that make up every organic and inorganic substance—I could make the Shadow World real."

"Where is the Shadow World, uncle?"

"You couldn't understand, child; but perhaps you'll get it, Jack. Already others besides myself know something of it, calling it the Heaviside layer. They know that radio waves cannot pass through it, and that the temperature is rather high. But they do not know that this Heaviside layer is the lower reaches of the misty Shadow World, frailer than a dying breath."

"Another world up there in the outer atmosphere?"

"Yes, the Shadow World, on whose surface live the Shadow People. Our denser world, much over a hundred miles below, is really its core. There are varying degrees of density in all matter, as you know. Your body is not solid. That stone paperweight over there is not solid. If they were, they probably would not be larger than a pea. Well, imagine a living body infinitely less dense than yours, whose molecules are so separated that the body has absolutely no density according to human perceptions—a body that is a collossal, living materiality, existing in a world made up of matter as nebulous as itself. That is the Shadow World, swinging around us in the outer reaches of the thinnest atmosphere, beyond even the stratosphere."

Annis broke in eagerly:

"But, uncle! I've got enough scientific information to know that there can be no condensation or convection in the outer atmosphere. How can there be water or life in your Shadow World?"

Dr. Salter glared at her angrily. "I'm doing the talking, and don't argue! I say that above the warm surface of what we call the Heaviside layer, which is a real, tenuous world, as I told you, float ethereal clouds above seas of unthinkable mistiness—seas whose scattered molecules are frailer than the thinnest earthly vapor. Only the vast, gossamer eyes of the Shadow People may see the flowing mists as seas, or view the ghostly clouds above them. The entire Shadow World is colored by those rays of black light of which we earth-men have a very slight knowledge. Our heavy atmosphere screens out most of the ultra-violet rays and all of some other rays of which we have no knowledge—actinic rays that probably have a powerful influence on the Shadow World."

Jack, who had been casting curious eyes about the laboratory, inquired:

"That queer, airship-looking apparatus under the open dome there has some connection with your Shadow World, has it not?"

"That's an electromagnetic space machine. It travels to the Shadow World with the speed of light. When it reaches the surface of the Shadow World, it is automatically subjected to the amplifying power of the molecule-controller, which expands its moleculor organization to the frail substance of the Shadow World. Any living bodies that have traveled with it are also expanded. Then, if I have set the organic-matter magnets, they reach out to seize any living body that approaches close enough. The body is drawn into the ship, the mechanism, that returns the ship earthward, goes immediately to work. After the ship has passed downward through the Heaviside layer, the molecule-controller, which is reversed now, automatically, reduces the ship and whatever is alive inside to earthly density. I never know what has been captured until I flood the interior of the spaceship with ultra-violet light. Often I get only a single insect. While the winged man still sleeps, let's send the ship up and see what we get."

The old scientist was all afire with excitement now. Jack, watching him make adjustments on the spaceship, even felt his own heart beat violently. This was not

the only time Dr. Salter had taken the young reporter into his confidence, for, on several occasions, Jack had been the first to receive news of some Salter discovery. "He's ready to make some announcement to the world," the young man concluded.

"Look carefully," Dr. Salter warned.

He pulled a lever, a whirring sound filled the room, and the spaceship disappeared.

Jack and Annis gaped up at the open dome. Only the clear sky above was visible.

"Where is the spaceship?" Jacked gasped.

"In the Shadow World," Dr. Salter said with quiet triumph. "Don't forget that I told you my spaceship travels with the speed of light. When it is in motion, the human eye cannot see it."

A slight sound came from the winged man. Dr. Salter switched the ultra-violet light on him again. The creature was moving in the drunken half-stupor that follows an anaesthetic. Oddly, his eyes, when they rested on Annis, lost some of their glazed expression.

"Touch him, Annis," ordered the scientist.

Annis timidly reached out her little hand and rested it on the broad, beautiful forehead. Instantly the winged man smiled and took the hand in his. A moment later, he closed his eyes again in renewed stupor.

"Sit there, Annis," commanded her uncle, "and hold his hand. I want to borrow the ultra-violet light."

He motioned carelessly. Under the dome rested the spaceship again. Its return had been almost soundless. Dr. Salter slid back a thick metal panel, exposing a quartz window. Through this he let fall the ultra-violet light. Another quartz-covered window formed an eyepiece, into which he peeped, calling to Jack a moment later.

Jack looked and saw a monstrous pinkish mosquito, large as a small calf, which crouched and glared at him malevolently. Creeping about on the floor were several creatures the size of a large housefly which, on closer inspection, seemed to be catlike mammals.

"Yes, they're cats," said the scientist. "Strange paradoxes seem to run throughout the fauna of the Shadow World. I've brought down so many of these catlike things that I have concluded they're a minor pest up there, say like Earth fleas. And every insect that has come down has been of so huge a size that I've been forced to think that there is a weird condition in the Shadow World; fleas infested with cats instead of cats with fleas!"

"Listen, uncle!" Annis held up a warning hand. "Bring the ultra-violet here."

The invisible man was talking. In a moment, the ultra-violet light made his perfect body spring out of nothingness. He was smiling in a dazed fashion.

"Tu gagelo snog?" he repeated for the third time, the queer words holding a question.

Annis repeated the words after him; then, in sudden inspiration, she touched her own breast and said, "Annis."

The delighted expression on the stranger's face was sufficient proof that he had asked her her name. He tried to repeat the word. "Anees," he managed.

Dr. Salter laughed heartily. "Here's a rival for you, Jack, and you'll have to remain friends with him, for we'll need him as an interpreter, perhaps, in the Shadow World."

"You're not going up there?" Jack gasped.

"Certainly. I've only been waiting to get a man. I feared there were no real and actual humans until now."

In the space machine, a sudden violent struggle was going on.

"The mosquito has found the cats," said Dr. Salter dryly. "Now I'll go for the mosquito."

He reached for a long, slender flashlight. "My letharay. I would not dare go to the Shadow World without it. Now, since I know there are men up there, I have an idea that I can prove somewhat of a savior to them with this. Look, Jack."

Jack applied his eye to the peep hole, and watched the mosquito inside turn instantly to smoking dust under the quick flash of purple light.

"A touch of this ray destroys organic matter instantly. A ten-second exposure would melt the spaceship, and half-a-minute of it would reduce it to atomic dust. I'm going to make a dozen of them while we're teaching Pathon a little English."

That very day Pathon's education began. Carefully guarded in the laboratory as an honored prisoner, the Shadow Man never learned that he was in another world. He was not permitted even a glance out of the heavily curtained and shuttered window. Pathon proved a brilliant pupil of an eager teacher, for Annis had appointed herself English instructor. His remarkable memory was amazing. He seldom had to be told anything twice. Vocabularies, conjugations, sentence structure—all were taken in voraciously by his hungry mind.

From the first, he understood what was being done, and tried to pass his own tongue on to them, which lanugage he called Loka. But the Earth people were not so apt as he. At the end of a week, none had mastered more than a smattering of the guttural tongue of the Shadow World, whose rough syllables were exceedingly difficult to pronounce.

Jack, having received a leave-of-absence, was a resident at the Salter home and almost a constant attendant in the laboratory. As the days passed and Pathon became more proficient in English, the two men grew more inimical toward each other. The winged man's passionate adoration of Annis tormented Jack with jealousy, for Annis still refused to answer a certain frequently asked question, and he was neither an accepted nor a rejected suitor.

Pathon believed that he was in a house in his own world, and that he had been rescued from The Flying Horror. From his faltering descriptions, it was evident that the Shadow People, menaced by the giant insects, had congregated in a pitifully small region, where their massed forces alone enabled them to survive.

Dr. Salter was convinced that the spaceship, which had no other locomotion than its straight ascension, always came up in a border region between the inhabited region and that occupied by the insects, for Pathon revealed that he had braved the region of The Flying Horror for some purpose, when, as he was fleeing from a monster, he had been rescued in a way still not clear to him. He only knew that these strange wingless beings were able to live in the region of The Flying Horror, and that they were soon going to his Country of Men to help his people.

While Annis taught the language to Pathon, Dr. Salter spent most of his time making letharay projectors. Not yet had he given this secret to the world, although he was on the eve of offering it for sale to the United States. Now each projector had to be

manufactured by hand. There was no mass-production.

As the passing days convinced Dr. Salter that The Flying Horror of the Shadow World was a scourge more dreadful than nightmare monsters, he altered his decision about permitting Annis to accompany them.

"You may go on our second trip, perhaps, Annis," he promised. "We can't let you take the risk this first time."

On the morning of the journey, Annis bid them a tearful goodbye in the laboratory, kissing each in turn, even Pathon, whom she had never seen except under the ultra-violet light.

When the moment for entering the spaceship came, Jack hesitated, saying:

"How are we to see up there if we cannot see a Shadow Man on Earth without the ultra-violet light?"

"I am hoping that when our bodies are amplified to the density of the Shadow World our vision will be modified. The visible spectrum has certainly been extended for the Shadow People beyond the red and the violet. Let us hope that in the Shadow World we shall be normal for its conditions."

The three men crawled through the low door into the spaceship, Pathon an invisible mass, who crowded them with his huge wings.

Dr. Salter pointed to a bowl-shaped ray projector which occupied the entire top of the compartment.

"The molecule cohesion controller. It works automatically. When we ascend, it amplifies all matter inside the spaceship, including the spaceship. Descending, the controller is reversed, and the molecules are compacted."

Jack did not answer. Dr. Salter's bony fingers were reaching toward the instrument board.

There was a click. Their brains seemed to explode, their bodies to spread throughout a mighty universe of dancing stars. After a split second of excruciating agony, blackness fell.

Consciousness returned rapidly. Soon Dr. Salter was able to gasp:

"Thank God, we're here! We're in the Shadow World, and we can see. Look at Pathon!"

A winged god towered high over their heads. Behind one spread wing, laughing mischievously, crouched Annis.

"I fooled you," she teased. "Pathon folded his wings around me, and I sneaked in."

"You little stowaway!" her uncle fumed. "I've a good mind to return to Earth and leave you."

"No! If you do, you won't find me when you get back. I'll go home."

While this argument was going on between the two, Jack had continued to stare at Pathon.

At last he cried out:

"What is the matter with Pathon? The colors of his flesh, his hair, his eyes; there is something maddening about them."

Dr. Salter passed his withered hand over his eyes. "We're seeing new colors which are too far beyond our human awareness to classify. Our brains and eyes, educated on Earth to the red, the blue and the yellow of the visible spectrum and to the mixtures resulting from their combination, are bewildered up here. We are color blind to the tints of the Shadow World, just as color blind Earth people see fewer colors of the visible spectrum, or distort those they do see. Keep a strong hold on your nerves. I'm going to open the window slide."

Cautiously he drew back the metal plate that covered the quartz window.

And he, an irreligious man, called on the name of the Creator. Annis screamed and hid her eyes. Pathon alone could look.

Glaring into the window with enormous, furious eyes was a hairy spider as large as an ox. The moment it saw the men, its dirty white body, blotched with the evil colors that tint decaying matter, swelled with rage, and it tried to dash itself through the window.

Dr. Salter seized a letharay projector and let its destructive ray stab through the quartz glass. Instantly the creature without fell in a handful of smoking ashes.

Pathon was wild with joy. He rushed to the scientist, knelt at his feet and babbled extravantly in English mixed with excited Loka.

"You have come us to rescue! Out from your house let me go. On my wings I will fly over the barrier for air bugs to take you and your destroying sticks."

"Shall we let him go?" Doctor Salter questioned.

He and Jack went to the window and surveyed the insane scene without.

The spaceship had settled almost on the edge of a black-watered, lily-smothered lake. Around it was an area of crushed, dead vegetation, where the spaceship had made a little cleared space for itself by many returns here. Only a short distance beyond giant, fantastically fruited trees flung dizzy-heighted branches to the sky. It was a world of stupendous frondage fashioned for the monster forms that sailed on transparent, membranous wings or tramped like elephants through the underbrush. Cow-sized ants crashed noisily through the tangle, carrying in their hideous jaws tiny mammals. Gorgeous butterflies with twenty-foot wing-spreads hovered over flowers that barely swayed under their weight. A caterpillar as mighty as a boa constrictor fed with crunching jaws; while in the lake darted bloated water bugs more hideous and menacing than crocodiles.

But it was not only the giant size of the creatures that caused the Earth people to close their eyes on the mad sight; the strangeness of form and color threatened their very sanity. Weird greens and reds, venomous yellows, impossible blendings of the three, whirled dizzily before them. All form seemed twisted in angles and magnitudes that could be fathomed only by an extra-terrestrial Euclid. An object as simple as the pink-flowered tree dipping into the loathsome, black lake water close to the spaceship caused them to retreat from the window in quivering terror. It was not a human's world. The very leaves on the Cyclopean trees were sized for giant mandibles and for the passive pupæ that clung to them. Even Pathon seemed dwarfed and feeble in this setting.

"My God!" Jack groaned. "Don't look, Annis!"

"We'll get used to it," Dr. Salter said. "Just keep a firm hold on yourself, and steel your nerves. Remember that even the sounds you hear in the Shadow World were not made for the ears of Earth humans. They would not register on the most delicate sound-instruments we have below."

"But why is it that we seem as solid as we did on Earth and as small?"

"All existence is comparative, stupid!"

Pathon was still pleading to be let out, when something in the jungle caught his eyes. He ran to the window, gesturing wildly, a shrill whistle on his lips.

Two vividly colored dragon-flies, as large as small airplanes, stopped in their flight to listen. They dropped gracefully to the ground.

"My own air bugs!" Pathon said in his queer English. "Over the barrier they took me, when for a spider web wedding veil, I went. In our houses the Lokan men keep the veil for the woman they are some day to love." He gave Annis an eloquent glance. "My own air bugs, they waited for me. Open the door. There safety for all waits."

Dr. Salter immediately opened the door. Pathon crawled through and whistled again. One of the giant dragon-flies fluttered its iridescent wings with evident joy. Pathon threw his arms around the creature's neck, murmuring soothingly in Loka.

"They're domesticated!" cried Jack. "Look at the saddle-thing."

On the long slender body of each of the dragon-flies was a canopied arrangement, fitted with seats, from which reins extented to the insects' mandibles.

Pathon rushed back into the spaceship, seized Annis bodily in his powerful arms, and, in a flash, was in the open again.

"Quick! Do as I do!" he warned the men.

He deposited Annis in the car, mounted in front of her, and, with a quick, practiced gesture, adjusted two broad leather safety belts.

"Hurry!" he cried again.

Jack, seeing the dragon-fly leave the ground with Annis, dashed forward, drawing the scientist after him. Almost before his fumbling fingers had arranged the safety belts across their bodies, the dragon-fly was off the ground.

"Spot the spaceship," Dr. Salter said. "There! That pink-flowered tree shall be our landmark."

Pathon waited just above them.

"Beware of the electric barrier! Follow me."

Up, up they darted, higher than the utmost limbs of the trees that seemed trying to hide their mighty-leaved heads in the clouds. Behind them trailed a horde of determined insects, which Dr. Salter dropped by the scores with his letharay.

Only a mile away loomed the mountain-high, metal wire fence, mounted on trees. Frequently it flashed with blinding blue fire, when careless insects dashed against it.

"A little world of men walling themselves in against the Flying Horror," Jack murmured. "They'd have to, to survive, for even in our world of tiny insects, we cannot exterminate them."

"A world of winged men given wings by evolution so that they may live at all. Have you thought of that, Jack?"

Jack had no time to answer. He was trying to compute how far this lofty fence stretched into the distance, surrounding the peaceful farm-country that lay below. Not far from the barrier stood a white farm house.

Pathon paused to gesture and call out:

"My home."

Even before Pathon descended to an early landing on the green lawn before the house, the Earth people realized that man's habitation in the Shadow World was a strain on earthly nerves.

The farm, like the jungle, was a place of giant vegetation. A wheat field resembled a thick grove of swaying trees, a truck patch a garden planted by Titans. But it was the pasture flanking the house that caught at the nerves of the strangers. Here on giant grasses of a mad green color fed a herd of hideous, bloated-bodied insects that carried swelling udders on their bellies.

"Mammalian insects!" groaned Dr. Salter. "Is that the source of their milk?"

On the other side of the house lay a giant truck patch, where labored domesticated ants. The plodding creatures, more industrious than mules, and as methodical as machines, worked in orderly groups, under the direction of the Shadow Man who was overseer. Some of them seemed to be hunting for something among the mammoth cabbages.

"They're destroying the animal pests," explained Pathon.

Dr. Salter leaned over a cabbage three yards in circumference, which had been damaged. In the folds of the giant leaves he discovered a tiny, brown-furred creature no larger than his thumb-nail. He picked it up and held it in his palm, where it stood docilely chewing its cud.

It was distinctively of bovine characteristics, even to the infinitesimal horns.

"The giant vegetation," said the scientist, "protects them here, as in our world the small insect pests are protected by what to them is the immense size of our vegetation. What does man eat in this world for his protein?"

Only a few minutes later, they discovered what a Shadow Man has for dinner. Pathon invited them into the house, where dinner was served by a frightened, winged cook who looked askance at the wingless strangers. Besides several vegetables, which had a strong flavor, there were huge, soft-shelled eggs, the origin of which the Earth people dared not guess, and slices of white, delicate-looking meat.

The Earth people exchanged uneasy glances. They tasted nothing but the vegetables, not letting themselves imagine what provided the buttery richness.

While they ate, Pathon told them much of the history of his people which he had not yet revealed. The Lokans were so ambitious to conquer the insects that they always made their wisest scientist king. A scientist-king had developed the electric barrier only two generations ago. From that time the human race began to increase. Now the Lokans held their flourishing country against the evil hordes without, and several species of the insects had been domesticated and made to serve man.

Because men had to cling together in brotherly love for their own safety, there was but one race, one country, the Lokans.

But not yet were the Lokans a safe people. Overwhelming catastrophies sometimes sent the Flying Horror upon them. Earthquakes, tornadoes, and, rarely, a vicious criminal or insane person destroyed part of the fence. Frequently lone insects were able to fly over the fence or burrow under it, and then some family lost a loved one.

Now Wanga Nog, the scientist-king, offered wealth and honor to the man who could free his people from the insect curse. Pathon smiled beatifically on his guests. All of them would win.

Directly after the meal, the journey to the City of the King was resumed. When the dragon-flies were to be mounted, Jack and Pathon had their first real quarrel.

Each wanted Annis as a riding partner.

"I am more used to the air bugs," said Pathon. "With me there is safety. Get behind me, Annis."

And the little mischief, with a saucy wink at Jack, climbed behind the winged man.

Up to this time, the Earth people had seen but two winged people besides Pathon; the cook, and the overseer on the farm; but soon they began seeing others, some on wings, others riding on dragon-flies.

Each one of the Earth people and Pathon were armed with a letharay. Soon they had an opportunity to be glad. They were sailing along on a lonely level, to avoid curious attention, when sudden, wild shrieks came from below. A venomous wasp-like insect had attacked a group of children playing aerial games. The tots were skillful of wing, yet were no match for the poisonous insect. The dreadful monster had nearly overtaken a cherubic boy, who was screaming lustily for "Maga! Maga!" when Jack's letharay shot its purple light. Dust and a leg or two floated to the ground.

The scene had been witnessed by several Lokans. It was no longer possible to avoid curious attention. Pathon caused Jack and Dr. Salter to descend to the ground with him. The winged man mounted a street fountain to make a short speech, and the Earth people understood enough of what he was saying, to realize that he was taking honor to himself. He said he had braved the dangers of the region of the Flying Horror to bring back these beings, who lived there in safety, who had come to deliver them from the Flying Horror.

"The liar!" Jack whispered indignantly. "We'd better watch our step, doctor. In the future, we should see that Annis is not left alone with him."

"Pshaw! You're jealous again, Jack."

"All right! All right! But I've got my eye on that fellow."

When the journey to the City of the King was resumed, a mighty crowd of winged men and women trailed behind them, making gala of the coming of their saviors.

Viewed from a distance, the City of the King seemed built of clouds and sunsets. Closer approach showed that it was spired majestically and crowned a central hill, with a magnificent white building, surrounded by gardens. It was the king's palace, toward which they flew.

News of their coming had preceded them. Before the door waited a group of soldiers wearing uniform-kilts. Kilts were the costume of all Lokan men.

King Wanga Nog gave them immediate audience. With Pathon acting as interpreter, the ruler, who looked like a bearded, winged Father Time, talked long with the Earth people.

"Let him believe that we have come from another country in this world," Dr. Salter had warned his two companions. "The insect-intimidated Lokans have no knowledge of unexplored and unknown regions up here."

And so it remained, the king believing that the Earth people had been brought by Pathon to save the Lokans. Even after the monarch had used the letharay himself, and discussed with Dr. Salter the feasibility of manufacturing more of the death tubes in the well-equipped laboratory in the palace, he continued to praise Pathon.

When the interview was over, the king asked Pathon a question. Jack, standing near, was able to understand two of the Lokan words, "reward you."

Pathon bowed his head, and his reply came in a hesitating voice. Only one word was intelligible to the Earth people. *Annis.* Pathon had asked for the pretty woman-creature who had come from the land of the Flying Horror. There was no doubt of this when King Wanga Nog caused the girl to mount his throne. Taking her hand, he drew her toward Pathon, speaking his guttural tongue.

"No!" Jack cried.

He dashed up the throne steps and threw an arm around Annis. In his halting Lokan, he told the king that Annis belonged to him.

Pathon seemed suddenly crazed. Leaping forward, he swept Annis away from Jack. Glaring wrathfully he stood, a winged god claiming the Earth-woman he desired.

"You lie!" he said fiercely in his excellent English. "I asked her, and she told me she was not your wife. Not owning her, you cannot question my claim."

Had Dr. Salter not held Jack, the young man would have rushed on Pathon. King Wanga Nod surveyed the scene with a mixture of emotions on his kindly old face.

"Let the woman decide," he said simply.

Pathon withdrew his arm from Annis.

"Choose between us." He drew himself up to his full, splendid height, with a slight preening of his wings and a glance of scorn toward Jack.

"Yes, Annis, choose," Jack said quietly.

"The Earth is my home, Jack. I'll have to take you."

If the withering letharay had swept over Pathon's features, a more devastating change could scarcely have taken place. But sorrow was quickly followed by a look of hate that he gave Jack. Turning, he left the room, wings trailing like those of a wounded bird.

The king smiled sadly. "Ah, the passions of youth." Then to Dr. Salter, "Come, old man; while the young waste their energies in love, you and I will begin our service to men."

Until far in the night, the two worked in the king's laboratory, assisted by several other scientists. Dr. Salter discovered that the Lokans had a remarkable knowledge of radiation, which was not surprising in this world of infinitely rare atmosphere. In a short time, perhaps, the Lokans themselves probably would have separated the disintegrating death-ray and made a deadly weapon for themselves.

While Dr. Salter supervised the making of the first of the giant letharays that would sweep destruction through the steaming jungles of the Shadow World, obliterating even the giant vegetation that harbored and fed the insects, Jack and Annis wandered in the palace gardens, under a moon that appeared twice as large as it did from the earth. Their troubles seemed ended now. On the morrow, they and Dr. Salter would fly on the backs of dragon-flies to the spaceship in its jungle hiding-place, and the sane old earth would again be under their feet. That Dr. Salter had promised them.

And now even Jack could be sorry for Pathon, who had not returned since leaving the king's presence.

The two, drunk with the beauty of the night and the rich fragrance of the giant flowers, were holding hands and looking at the stars that neither twinkled nor were five-pointed in that black, close, almost atmosphereless sky. Suddenly Annis screamed and threw herself into Jack's arms.

Across the wide face of the moon passed a colossal black winged form, a chattering thing that sought prey for its sucking mouth.

"Ssh!" warned Jack. "It won't see us—my God!"

He pointed to the two tall lights that flanked the rear gate of the palace grounds. Around them, like Earth moths drunk with the light, whirled winged creatures, whose flapping wings made a noise audible even where the man and girl stood.

"Something has happened to the barrier!" Jack cried. "Look! Look! *Look!*"

The entire sky seemed filled with flying atrocities. From the south they came pouring, swarms of night creatures hungering for blood.

During the two-minute run to the palace, Jack and Annis had ample proof that the invaders were already feasting, for human screams and groans rang out everywhere, while overhead swept things at which they dared not look. Through some miracle, they escaped being attacked before they were behind shut doors.

Four insane hours passed. In the palace were the two small letharays that the Earth men had brought with them, and these brought down countless scores of insects from the windows, and also swept destruction among the garden plants. Cannon, violent acids and streams of hot water also kept the inmates of the palace safe, but pandemonium ran throughout the city. The insects had come so suddenly that many people had no opportunity to protect or defend themselves. Soldiers wearing armor swept through the streets with their inadequate weapons which killed only hundreds of the Flying Horror, while thousands of them destroyed crops and lives.

The king was frantic. Telephone messages had come. The entire section of the barrier bordering on Pathon's farm was down, blown up by explosives.

Before the night was over, even the little army was demoralized, and the soldiers fled from the open, seeking shelter. Every roof, every window was violated by beating wings, crawling feet, seeking mouths.

The king said to Dr. Salter:

"We are helpless until after dawn. Then, while the creatures are quiet in the cool of the morning, the barrier can be repaired. Soon, perhaps, we shall need no barrier, thanks to you."

At dawn, Dr. Salter sought Jack and Annis.

"We've got to get back to Earth," he said. "We can help them no more, for now they can make the letharay tubes themselves. Have you enough courage to attempt an escape?"

"But how can we escape? How can we get to the spaceship?"

"Dragon-flies. A letharay will break through the bolted royal stables for us and release dragon-flies."

There was not a single guard to bar their passage without, for who would want to leave shelter now? Outside all was quiet now, a sinister quiet that hinted of the horrors that hid in heavy-leaved trees. Only a few gloriously gorgeous butterflies feasted on the garden flowers.

Dr. Salter's letharay tore a careful hole in a stable. Soon two harnessed dragon-flies were eager to be off in the cool morning air. The Earth people mounted and flew over a desolate country. Everywhere were the bodies of unfortunates caught unawares by the Flying Horror. Here two lovers lay dead in each other's arms, their waxy faces proving that their blood had been drained completely. Here and there corpulent spiders made unspeakable feasts, or spun strong yet delicately beautiful webs around a suspended victim.

"Your bridal veil, dear," Jack said once to Annis, who rode with him. "Every Shadow Woman wants one. Do you?"

"No!" Annis shuddered.

Unmolested, they rode until they reached Pathon's farm. Here destruction was complete. The fields were cleaned. The very house had taken the appearance of dilapidated age; an army of boring insects must have descended upon it. Part of it had been torn away by the explosion which had wrecked the barrier.

The two dragon-flies swept low over the scene that had been so peaceful a few hours ago. Now the morning dew glittered on desolation. Even the domesticated insects were gone, probably to join their untamed kind.

"I wish I could meet Pathon face to face again," Jack said.

Just as his dragon-fly was taking to the air again, he did meet Pathon. The Shadow Man swept up from behind an outhouse, mounted on a dragon-fly. Even from the distance they saw him, the Earth people could see that he was crazed, for he waved something wildly, shouted, and flew off in the direction of the jungle.

"The letharay!" Jack shouted to Dr. Salter. "He has one. He knows its use. He will destroy the spaceship!"

He did not wait for Dr. Salter to answer, but went streaking after Pathon. Dr. Salter was close behind.

The spaceship lay not more than a mile beyond the barrier. Who would reach it first? Pathon seemed to be gaining speed. He knew how to get the utmost from the skill of the dragon-fly he rode, and he had a long start on the Earth people. The letharay would be potent one hundred feet distant.

Annis grew hysterical, urging Jack on. "I'd rather die than have him destroy the spaceship. I will die if he does. I'll starve to death. I can't eat the food up here. Hurry, Jack!"

Already from the air the black lake could be seen glimmering under the morning sun, its surface sometimes broken violently by the giant life swarming in the water. Pathon was headed in its direction, his victorious shouts coming faintly to the ears of the pursuers. He was gaining altitude. It was evident that he intended to strike at the spaceship from directly above.

"He'll do it!" groaned Dr. Salter. "Another few seconds——"

Pathon was directly above the spaceship. The Earth people knew this by the giant pink-flowered tree which stood near the spot where the spaceship had come up. Pathon paused for a moment for another victorious shout at the Earth people far away. Then he pointed the letharay downward.

There was a flash of purple light. He had turned on the death power.

What happened was more fantastic than any sight the Earth people had witnessed in the Shadow World. During that moment when Pathon had paused to gloat over his victims, a green monster shot up from the edge of the loathsome waters and darted toward the man on the dragon-fly. The purple death ray, swerving from the perpendicular to an angle, fell full upon the dragon-fly's head. The black water below opened over a dead insect and the living man strapped to his back.

The disturbance that followed the splash was not made merely by a drowning human, but by bugs more hideous and deadly than crocodiles; hungry bugs that took their prey alive. The Earth people, at the edge of the lake now, turned their heads.

The spaceship was as intact as it had been when left in its lonely hiding-place. Spiders had enclosed it in bridal veils, and a mighty-winged butterfly poised itself on the crest. In a moment the door was open, and three Earth-hungry people tumbled inside. A bony hand reached for the controls.

There was a click, a universe of dancing stars—and merciful blackness.

Three dazed people looked stupidly at each other. Through the quartz window, which Dr. Salter had forgotten to darken with the outside slide, could be seen a disorderly but familiar laboratory.

The scientist spoke first. "I'm not through with the Shadow World. I'm going back soon, this time to another part of it."

Jack and Annis were too interested in themselves to answer.

"Here's a bridal veil, Annis darling," the young man was whispering.

And this time she did not shrink from accepting what he offered her, a trailing web of strong but exquisitely lovely spider-lace which he had torn from the spaceship when he had entered it a few minutes ago.

THE END

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. What does the term rice grains indicate in reference to the sun? (See page 802.)
2. What are faculae? (See page 802.)
3. What is the weight of the sun and the amount of its daily loss in weight? (See page 802.)
4. Give average figures for velocity and dimensions of solar projections? (See page 803.)
5. What are the two divisions of the human brain? (See page 804.)
6. What division of the human brain differentiates man from the animal and how? (See page 804.)
7. What chemical has the odor of oil of bitter almonds? (See page 810.)
8. What is the length of the Martian day? (See page 813.)
9. What is the corona discharge produced on electric power lines? (See page 814.)
10. What are the names of the satellites of Mars and their motions? (See page 815.)
11. What are the principal data of the star Sirius? (See page 816.)
12. Describe tear gas? (See page 819.)
13. What is the nature of human nerve currents and functioning of brain cells? (See page 820.)
14. What is the relativist view of the action of motion on a solid? (See page 858, G.P.K.)
15. How can an observer see the past? (See page 858, G.P.K.)
16. What is the possible action of the stars of the universe on matter? (See page 858, C.S.)
17. What clue is there to the temperature in outer space? (See page 859, L.M.S.)
18. Is the planet Venus nearer to the sun than is the earth? (See page 859, L.M.S.)

The initial letters on the last five questions are those of the writers of the letters referred to in which or in the comments thereon, the answers can be found.

The Call to Migrate

By H. M. Crimp

WE have in this story an interesting picture of what may be termed a plague, brought on by very small beings. It is really a study in entomology and will be found to hold the attention of the reader to the very end.

PROFESSOR MARK SCOTT was on vacation. That is to say he was absent from the scene of his daily duties; but as far as ceasing work was concerned, he was as far away from an actual holiday as ever.

This was a very natural occurrence with him for two reasons; the first was because he was an entomologist, and was wrapped up in his work; the second was because he was in the country and it was springtime. The world, which to him consisted almost entirely of insects, was just beginning to get busy with its annual job of hampering man in his business of production, and so there was much to interest him wherever he turned. Naturally he worked; he just had to, but then his work was his play.

Like many scientists, Professor Scott made the study of insects his profession, his hobby and his amusement. To him the mere knowledge of facts was not enough. Though many students of entomology are content just to know the scientific names and how to classify all species of insects in their respective orders and classes, such a profundity of apparent facts was not enough for him.

He aspired to learn the secrets underlying the movements of insect life. It was that part—animal psychology—which fascinated him. His reasoning was on the lines that it would be much easier to combat pests if only man could understand something of the underlying impulses which cause them to breed in swarms and become plagues, at times, and in other, equally favorable seasons, to be of no menace at all.

"Apart from the absorbing interest in such a study," he said, "the economic value of a knowledge which would defeat the destructiveness of insects would be incalculable. Why, in the matter of corn alone, the loss in this country is often over three hundred million dollars annually. In other crops it may be just a small percentage—in very favorable years—but it is generally over ten per cent; while there may be a loss of almost the entire crop. That was the case when we experienced the ravages of the boll weevil in cotton some years ago."

The professor was strolling with his nephew, who had a thriving farm in California. The grass was vividly green with spring-time growth and the meadows promised a bounteous supply of fodder. As they admired the lush profusion, his companion's sharp eye noticed a few, lively insects hopping in the grass.

"It would be a swell achievement, sure enough, if you could do something like that. See those grasshoppers; they're going to be the trouble with me, this year. Notice how they're just hatching out. I reckon there'll be a regular plague of them very soon."

Professor Scott took a careful look at the small midgets of recently hatched locusts.

"They are a bit young to identify at present," he observed, "but those look like a *Melanoplus Spiratus.* It used to be one of the greatest scourges in the States; but nowadays it is of no particular menace at all. This one, also, might be *Melanoplus Atlantis,* which is also widely spread throughout the country, and in that case there is more to be feared from it as an incipient plague. It will need watching.

"How do you account for the fact, Uncle, that a locust, of the kind you first mentioned, should be a scourge at one time and not at another?" asked the farmer.

"Now you're asking me riddles," replied Scott. "Also you're touching upon my pet hobby in entomology. That and similar questions are ones I am trying to get answers to. We scientists, are at present, only well versed in obvious facts; we have not yet been able to explain many apparently simple happenings in the animal world. Why birds migrate, why insects are plagues one year and not another—those are problems which are puzzling scientists very much. Many theories are put forward; but few satisfy even a casual analysis.

"I have been looking at the problem from a double viewpoint—first on account of the economic loss of hundreds of millions of dollars annually, in production, due to pests, mainly insectivorous; secondly from the point of view of putting the enormous energy in such life to produce, or help produce something of value to make up for the destruction of past years."

"You'll have a bit of a task there, Uncle," Jim Scott cut in.

"Well, you know, we have two noted examples of insect production—there's the silk-worm, and the bee, leaving out such others as the cochineal insect and other odd examples of insects which do useful work in keeping down vegetable pests. For example, in Australia, the prickly pear has become a real scourge and its spread is being restricted by introducing one variety of the cochineal insect to destroy it, and with splendid results."

"But bees and silk-worms do not work for *us* so much as they work for themselves, and then we come along

From the southern states the danger spread like a plague, following the northerly course of spring. . . . The people of the wheat belts of Canada were organizing to attempt to cope with them there.

and rob them," said the younger man in objective argument.

"Granted that, still we *have* harnessed them to work for us. We do more with horses and oxen. However, my hopes have been to do something along the lines of changing the insect's habits or instincts, so that a notable achievement could be attained in actually teaching an insect a trade, as it were. I had intended to have a fling at that problem which has beaten many triers—the one of utilizing spider-webs for yarns. I had intended approaching it from a new angle—by trying to induce the spider to spin long threads; but now a new idea has arisen with this problem of the locust.

"That question of yours—why *Melanoplus Spiratus* does not now become a scourge?—gives me an inspiration. If I had gone on with my intention to educate the spider to spin differently, I would hardly know where to start. Now that question of yours gives me an inkling of an easier way to proceed.

"Locusts all over the world become plagues at different times. One of the worst varieties, *Locusta Migratoria,* breeds in the river beds and deltas of rivers of Turkestan from the Caspian Sea to Lake Balkhash. From there they issue in billions and at times destroy everything growing. In South Africa *Locusta Pardelina* and *Schistocerca gregaria* are two other troublesome species. In Australia other varieties are a source of great damage at times. Here in the United States we have several migratory and several purely local pests. In fact the depredations of the locust are world wide. So much for the extent of the problem. Now to get down to cases. If this Spiratus gentleman has changed his habit of his own account, might not other species be induced to do the same; but at our instigation? If the area of the pests could be limited, that is, if the locusts could be prevailed upon to stay at home and not migrate, they would naturally be a lot less harmful. Not only would their numbers be much less, because of the fact that they would have to accommodate their breeding to the amount of food available; but since they did not travel, other districts would be free from their destructiveness.

"Now, it seems to me to be an easier problem to investigate why locusts migrate, and to devise means of curbing that tendency, than to attempt the greater problem of teaching spiders the job of spinning long webs. Moreover the knowledge gained by solving the lesser riddle may give a clue as to how to proceed with the more complex one. So you see, Jimmy," concluded the scientist, "I'll get right into this at once. I've got an idea or two as to how to start."

"Well, good luck, Uncle. You'll sure be a benefactor if you stop those grasshoppers skipping about so much," said the Professor's nephew in commendation of the older man's resolve.

It is often the very smallest of actions which let loose the impetus to great consequences. It was so in the case of Professor Scott. This short conversation became the origin of great and serious happenings.

With a concentration only possible to so keen a brain as his, and the enthusiasm of deep interest, Professor Mark Scott went to work upon his self-set problem. "There is but one way, in my opinion, in which such inferior life as insects can be stirred to move out of their usual ruts, and that is by some telepathic urge," he said.

"It is possible," he thought, "that in one of her mysterious ways Nature may send out an impulse, a form of rallying call, for locusts to be up and doing. If so, that message will be as capable of interpretation as a radio message. To hear it and read it, I have, as a first problem, to construct an ear like a locust's ear, and then discover exactly what wave-length is used for the message."

From an anatomical standpoint, the study of the locust's auditory apparatus was the simplest problem. After that to devise an apparatus which would duplicate that organ was a task of much greater magnitude. Alone the learned professor might never have solved it; but he went with his troubles to a friend who was well versed in all matters relating to radio waves and wireless apparatus. Together they tackled the problem.

Their apparatus made, they set about designing a companion to it, a transmitter which would send out a ray capable of exciting some evidence of vibration in this mechanical ear. They found that the receiver would respond only to one particular wave length. That discovery gave a foundation to work upon.

The final solution, however, was not by any means so easy. Though they were able to transmit vibrations and rays from the transmitter to the receiver, the same transmitted rays did not have any noticeable effect upon the actual locusts. They had, however, made a start upon the problem, and it seemed to them that exhaustive experimentation was the path to a solution.

Then, by a remarkably clever experiment, Professor Scott confined several locusts in a room and by sending out various wave-lengths of electromagnetic energy he found one which had a marked effect upon the insects. Under its stimulus they flew and fluttered about the confining room in excited efforts to go somewhere. The Professor released some and they all took wing and flew off together to the West.

"That looks like getting somewhere," he remarked to his collaborator, Professor Mencke.

Following on that achievement, they designed another instrument, a modification of an electroscope, which recorded the fact that the locust was receiving an impression. From that point onwards it was comparatively plain sailing, though much more tedious experimentation had to be done before the Professor's 'Stimulator' was a piece of completed mechanism. Its action caused the insects to speed up and move as if under some great urge.

The result of two years' solid toil gained for the two scientists a mere column in the daily press, though in scientific circles they each achieved their meed of glory. Though they had each gone a considerable step towards a knowledge of insect movements, they had not gone far enough to interest the general public, who were to be awakened later.

In their offices away up in a sky-scraper building in New York Dudley Thorpe and Milton Heintz idled away a long afternoon.

"This depression affair gets one's goat," said Thorpe between desultory puffs of a cigarette. "There's not a racket of any sort at which a bright boy can make even a nickel. When there's no dollars floating around it's no good looking for suckers—they're all sucked before worthy guys like this one here gets a get-in on the divvy."

"Sure, boy, you've said a mouthful," commented Heintz. "Things are slow. I'd give a big roll, right now, for a good steer to a profitable racket . . . Whew . . . I think I've got one."

Heintz had been lazily conning the sporting notes in the morning paper. His wandering eye caught the heading of another paragraph and he was glancing at it, even as he talked.

"Here, listen to this," he said, "SCIENTIST SOLVES MYSTERY OF MIGRATION OF LOCUSTS," he quoted from the heading of the news columns. "Professors Mark Scott and Mencke have just completed an instrument whereby they have influenced locusts to migrate under such conditions as the controllers desire. This successful experiment in the control of insect movements is likely to lead to great things at a later date. Such is the claim of the discoverer, Professor Scott."

"What's all that tripe got to do with us?" asked Thorpe with sarcasm. Heintz answered the question with another.

"Say, did you ever hear of a stuff called wheat?"

"Wheat?" asked the other in curiosity, as he sat up and looked at Heintz, "Wheat? Are you trying to put over a wise-crack or is this another of those questions you have three guesses at?"

"No, it's a straight question. Wheat you know is the base you start from when you want to make a loaf of bread."

"Yes, I know, don't razz me. What's all that to do with us now?" Thorpe said with rising irritation.

Heintz laughed.

"Keep your shirt on," he replied. "It's like this. Wheat is a sort of a drug on the market just now; it's so cheap. Why I read somewhere some time ago that they were burning it for fuel because it was cheaper than coal. If we turned all we got into cash we could buy up quite a lot of wheat."

"What the Hell——" began the other man really irritated now.

Heintz, however, did not pause. He went on, not heeding the interruption, "Wheat is cheap. We could buy quite a big parcel; next year it mightn't be, because . . . because . . . if we could get hold of this secret of Scott's we might be able to make those locusts migrate right into the wheat fields . . . and then . . . then . . . it would become dear, very dear. . . . We might then be able to clean up quite a wad. Get me?"

"Hell, O Boy, you have sure said something, this time." Thorpe sat up, an illuminating smile of greedy anticipation on his face. "Hell, yes, this is the deal we could work with Hugo Pancrast. He's got the dollars, and this racket you've suggested is one which will take some financing."

Professors Scott and Mencke were just a little hurt at the absence of any public enthusiasm over their achievement. Scott was, on that account, the more pleased at the arrival at his university residence of Milton Heintz who announced that he had come down especially to congratulate the Professor and to look at the wonderful instrument he had made.

Glowing with this tribute Professor Scott explained every fact and all facts connected with his discovery making plain every single detail to the business man. This was more than the latter had expected. As he was quite ignorant of mechanics and radio, the most careful examination left him no whit better informed.

"I'll never be able to take in the wonderful achievement you have performed by this machine—not by such a casual inspection, Professor," Heintz remarked.

"Then take it away with you for a few days," Professor Scott replied unsuspiciously. "I had intended putting it on exhibition; but no one else is especially interested in it."

Elated beyond his wildest hopes, Heintz returned to New York with the original machine. Thorpe met him and reported that Pancrast, the financier and millionaire, had been thoroughly interested in the venture. He had made an agreement whereby Pancrast would finance him on a fifty-fifty basis.

"Now, we got this box of tricks," said Heintz, "we'll be set. All we got to do is to get a good man to make a copy of this, then try it out and we'll be ready to begin."

As the veriest schoolboy knows it is spring or autumn, summer or winter, somewhere on this earth of ours every day of the year. So to test the value of Professor Scott's contrivance, it was merely necessary for the interested parties to pick the handiest location and go there and test it out practically. It was then early summer, and there would be many winged locusts just developing in the south of the States. With their experimental "Stimulator" they set off.

Though pressed to go, Pancrast resolutely declined.

"No," he replied smilingly, "I'll trust you. Even if I buy largely I can't well lose on the present market prices. So go to it."

Heintz and Thorpe set off with the instrument hidden in the back of a closed car. They intended to use their engine to generate the necessary current for the stimulating waves. Traveling south they at last reached a spot where they found the insects in a backward enough stage to be good subjects for their experiment.

With considerable thrills of expectancy they started the current through the Stimulator. The electric spark flashed and crackled, and tubes sent out their phosphorescent glow. They were near a thick patch of feeding insects. In a magically few minutes they noticed the locusts stop feeding, and sit still as if listening. At the end of half an hour they became restless, and then began fluttering as if with anxiety to fly off.

"This looks interesting," said Heintz as they watched these efforts to move. For an hour longer they watched, and then it seemed as if their electrical impulse had given the locusts the power for quicker development, for in that time they seemed to attain the ability to fly. Suddenly they rose in a vast flock and soared away. Not only those near-by; but all around, as far as they could see, the insects were moving.

"That proves we can do it all right. Let's get back and get more and bigger machines. We haven't got too much time to spare. We'll get a dozen or more Stimulators made and hop right into this business," said Heintz again, as he entered the car.

A score of Professor Scott's Stimulators were made and a score of carefully selected operators were engaged, the latter being promised special rewards for secrecy, and then an itinerary was arranged. Heintz, as the organizing brains of the enterprise, explained the procedure.

"Roughly speaking North America is the largest wheat producing country in the world, combined with Canada

we here harvest about fifteen hundred million bushels annually. Europe, of which Russia is the chief producer is about one hundred and fifty million bushels short of that. Argentine provides three hundred millions, India a little less, and Australia about two hundred millions, though harvests vary according to local conditions. Still this will give us a comparative idea of where we shall confine our endeavours. From our own importance, therefore, it is best to begin the good work at home.

"Good work's right." Thorpe cut in, but Heintz did not heed him. He continued on:

"Locusts, so I have learned, hatch out in early spring. In six weeks or so they grow to about half size and then they begin to hop along in a march. At that stage they are destructive in the highest degree. Then they grow wings and migrate by flying. In a suitable location, in Summer or Autumn, they lay their eggs and then disappear, flying off to unknown destinations. It seems to me, that our task is to stimulate as many flights of laying insects to the wheat areas as we can, and then leave it to the insects themselves to destroy the new crops."

"It looks right to me," commented Pancrast, leaning back in his chair, and practising at making smoke rings. "I leave that part to you. I'll see into the financing and you boys see to the scarcity of crops next harvest."

"Well, we've got to hurry. Harvesting begins in the Southern States in May and as late as August in Canada. We need to bring our locusts on to the job about two months before those times, so that they'll eat the crops while they're green. So as that's all we can do now we'd better go. I'll get the men started and then I'll hop and help you with the buying part of the job. Well, so long."

FOLLOWING along with this dastardly plan, Heintz and Thorpe with their twenty assistants, set out for Canada. They placed their Stimulator in fast cars and sent out strong streams of the energizing rays which the machine emitted. Spreading out and following the locations of the wheat-growing areas, they started the movement from the north to the south. Then Heintz left Thorpe in charge of that area, while he with half his men hurried across to Europe.

Time began to be a factor to reckon with. What should he do? It was vital to their plan to excite the locusts of the Turkestan area, they being the most destructive of all.

"What a fool I've been not to think of it before. I'd do the job much quicker by plane," he said to himself. "Though it would be more dangerous in the event of a crash."

It took a little diplomacy, quite a lot of bluff and a ruinous expenditure in bribes; but at last Heintz got his planes with permission to make an exploratory journey across Turkey, Persia and Turkestan. However they got their permission and, with three planes, they swept that area thoroughly. Then Heintz divided up his men, sending some to Australia and some to Egypt, the rest to South America. Feeling that he had completed the preliminary work to his satisfaction, he set off back home.

THE seeds of destruction having been sown, the conspirators organized for the great and dastardly business of its exploitation. Hugo Pancrast, as a millionaire, naturally was in touch with other monied men. By careful sounding, he managed to collect a small syndicate of five wealthy magnates, and having explained the enormous possibilities before them, they all resolved to put in all their great resources in the one pool and buy up or get an option over all wheat available at the present price. This arrangement was concluded while Heintz was away with the Stimulators.

"Wheat is today quoted at fifty-six cents a bushel," began Pancrast at the first actual meeting of the syndicate. "We have a capital of eighty-five million dollars. That means that we can actually buy up over one hundred and fifty million bushels. Since wheat will assuredly rise to double that amount at the first sign of a plague of locusts, and certainly to three, four, or even ten times the figure, when there is a definite famine, the possible profits in sight are colossal."

A murmur of excitement went around the table.

"Sure, that'll do me for profits," said Nathan Isaccson, who was a greedy money hoarder of the very meanest sort. Then a thought struck him. "How do we divide all this money?"

"We split the profits according to the amount put into the pool, dollar for dollar," replied Pancrast. "That's in the article. All my organization expenses to be paid of course."

"Then, what about these two men you got in with you—Heintz and that other one, er . . . Thorpe. What about them. Have we got to split with them? They put nothing in." Isaccson sat up and then leaned across and thumped the table to emphasize his words. True to form, his greed was such that he wanted everything for himself. "I'm not going to share up my good dollars with these paupers, who didn't put anything in."

Pancrast sat up, intensely stirred.

"You don't understand," he began. "This wheat corner idea was originated by Heintz, and Thorpe is his partner. They worked up the whole thing. We were brought in because they were quite unable to finance it. . . ."

"That's all right. I know all that; but have you got an agreement with them that they are to get equal shares with us, when they have put nothing in? You answer me that." Isaccson snarled his words at the other man.

"Well, not altogether. You see, I financed the whole scheme so far. They did the detailed work. We have a roughly drawn agreement; but it does not deal specifically with that matter," Pancrast replied with heat. "Still we've got to take them in with us."

"Then," decided Isaccson with finality, "I drop out. I'll go alone."

"But you can't. You'll wreck the whole arrangement," cried Pancrast.

"Well, it's that, or these men stand out," said Isaccson with decision. "We're not under any agreement with them, so we're not called upon to share up with them. I'd have never agreed to that at any time."

Here was an ultimatum. Without Isaccson the whole project would be sure to break down, and all of them would be rushing headlong into a ruinous competition. News of what they were doing would then leak out and the whole, wonderful scheme would all go smash.

This is what Pancrast thought as his quick mind summed up the situation. It was loyalty to the originators of the scheme or financial loss. As it generally does, money won.

"All right," he said to Isaccson, "you win. I'm under no obligation to share; we'll just pay them a salary for their troubles and let it go at that."

Thus it was that the men Pancrast had schemed so nefariously to benefit, conspired to cut him out of his legitimate gain, though Heintz received not the slightest hint of this till long after he had returned.

THE buying arrangements of the Wheat Syndicate had been barely concluded, and much of their purchases stored away in great elevators, when a disquieting circumstance began to be noticed in the wheat belt. In the late summer great flights of locusts came over the land in immense clouds. Here and there they settled wherever there were bare patches of soil and where the grass was thin. They lay about in pairs for a while and then keen observers noticed that the females were laying eggs.

This locust flight was a nine days' wonder at the time, and various local journals made reference to it; but as the scourge from such insects had never been more than a nuisance, no one was particularly concerned.

The winter passed; the crops were sown; and then spring came in, with its slow change from frosty nights to milder weather. The grass shot out longer blades and early blossoms gave gaiety to the meadow and wood. The wheat was well grown.

The first trouble began to the south of the wheat belt. As the sun's rays warmed the earth, an observer might have noticed small, yellowish-white, little creatures here and there issuing from tiny holes in the ground, as if a three-inch nail had made a perforation there. Comical they looked as they emerged and were blown helplessly about in the wind till they found harborage and rest in the tufty grass.

Few at first, each day's warmth increased the number till the ground became literally swarming with them. While the newly hatched insects were whitish in color, they turned in a few days to a greyish green, and began to hop about. Then it was seen that they were very young grasshoppers, or specifically, 'nymphs' of locusts.

"We're in for a bit of a plague of grasshoppers," one farmer told one another.

"Yes, too right we are. I'm going right home to get my hopper-dozer fixed up," another said in reply. "I reckon on wearing it out this spring. There'll be so much work for it."

There was. A week or so later the fact became plainly apparent. The insects had grown by this time to about three-eighths of an inch in length. They were already making great inroads upon the grass. Some farmers had already got out their hopper-dozers and were doing a bit to destroy the vermin. These implements of destruction consisted of screens or frames on runners which were drawn across the fields. As the locusts jumped at its alarm, they hit against the screen and fell into vats of water covered with kerosene. In this way a few were killed, but it was an inconsiderable few. It was an effort comparable to draining a reservoir with a cup.

Eventually the locusts grew to a length of body about three-quarters of an inch, and then the real menace began. As though all were obsessed with the one idea, they all started off on a hopping and crawling exodus from their original breeding places. Their appetites became many times more ravenous and insatiable. Like a mighty army they all mobilized. Every tuft of grass, every square yard of earth sent out its recruits till, magically, the earth seemed to be covered with a moving carpet of locusts.

With wondering, amazed looks from bulging eyes, set in shiny bald-looking heads, they hopped on, and on, and on, with relentless purpose. The hopper-dozers were long discarded as being hopelessly inadequate. They swarmed into flower and kitchen gardens. Before they entered there was ornamental or lush profusion. When they had passed on only some woody stalks or green stumps, eaten level with the earth, were left as evidence of any agriculture having been there before.

When they met a growing crop, they climbed the stalks in dozens, all grinding and chewing, till the field of green was annihilated; the land was left as bare of growth as before sowing.

Some farmers who had stacks of straw, carted great loads of it, and spreading this before the hopper-army, burned it up, in the hope of turning the march away from their corn fields. The effort was futile. Unconcerned, unhindered, undismayed, the march went on, the leading ranks hopping right into the blaze; but there was no turning aside, no holding back. The ground was littered with reddened, roasted corpses, but over these, when the blaze died, the vanguard hopped to their objective—the growing wheat.

Trenches were dug in the line of march and filled with water and kerosene; but when these could not be hopped across, they were filled with the bodies of martyrs who thus bridged over the trench for the ranks that followed to step upon.

Some of the more enterprising farmers had tried to introduce bacterial disease amongst them in an earlier stage; but this was no special deterrent, nor did others have much success with spraying poison from airplanes. In some cases this did succeed, but too often the wind blew the poisons away without their achieving anything of value, and with danger to human beings and farm stock. It was found to be practically impossible to deal with the locust menace in any effective way. Meantime other farm and garden produce became alarmingly menaced—grass of course, hay, potatoes, fodder crops in a long list were sufferers.

SO wide-spread and menacing had the locust invasion become by this time that the city papers were giving it pride of place on their front pages. There was no particular alarm at this stage because nobody expected even in his wildest dreams, that there would be more than a little local shortage, a shortage which all authorities considered would be supplied by the past two years' big surplus. "In fact this shortage will be a real blessing eventually," said one optimistic economist. "It will clear off surpluses, stimulate trade and generally speed up other forces of production. We need something like this in these depressed times."

This lame attempt at cheerfulness quite missed its mark, when reports began to come in of menacing dangers over a wide range of territory. From the southern states the danger spread like a plague, following the northerly course of spring. As the warmth of the sun began to affect the soil, so did the locusts hatch out, and by the time the Southern States were experiencing the full destructiveness of the locust swarms, the people of the wheat belts of Canada were organizing to

attempt to cope with them there. On top of that came news from abroad, that a similar plague was attacking the crops in Southern Russia. The danger now became a matter of world-wide concern.

ALTHOUGH as yet, there was no shortage, nor even a near prospect of scarcity, the attention of the world was turned to wheat and its economic value. The price began to rise under the stimulus of enlivened trade. Many far-sighted millers began to make arrangements for continuous supply, as did other consumers of flour and wheat products.

It was then, that speculation and market manipulators began to find that there was very little wheat at all on the market. Interested parties looked into the strange circumstance. There were, plainly enough, immense stocks. Everywhere elevators were full and storehouses everywhere were crammed with grain. Why then the inability to procure supplies? The mystery of this strange cornering of the world's wheat surplus struck a note of alarm.

The knowledge, that some unknown buyer had secured practically the whole of the wheat surplus, made the market pannicky. Speculators saw golden profits in the investment and they jumped in to buy up at any price whatever was buyable. From the original fifty-six cents when the Wheat Syndicate began their operations, this grain had now risen to eighty-seven cents. Now it went up like a rocket in ten-cent rises. In a week it was one hundred and forty-two, and a week later still it was one seventy-five.

Under Isaccson's very able financing, the Wheat Syndicate has been marvellously successful. By the irony of things, it was Thorpe and Heintz who had made this possible. Returning from their successful job of stirring up the locusts, they had been set to work by Pancrast, under Isaccson's direction, at quietly buying up wheat. With the help of members of their team, they had bought up for cash all available surplus grain—under the guise of millers's representatives, handing over to the Syndicate all documents and certificates relating to the deals.

Then posing as speculators, they had secured options over immense deliveries, six months hence, at seventy-five cents. The brokerage firms had considered them lunatics, but of course would not refuse such profitable business, as they saw it, particularly so since Heintz and Thorpe proved their possession of money. It was a clever move on Isaccson's part, but a cruelly cold-blooded one, to use the skill and enterprise of these men to organize the scheme of their own fertile minds for his profit. They did this, expecting they would be enriching themselves, while all the time the arch plotter, Isaccson, was chuckling over the fact that he had eliminated them completely.

By means of Heintz and Thorpe's systematic buying, the Wheat Syndicate had actual ownership of over one hundred million bushels, and had options over five hundred millions. At the present moment the profits were well over one hundred millions of dollars on the wheat actually bought, and a clear dollar on each bushel of option wheat. This second colossal sum of five hundred millions, Isaccson did not expect to get, not even a fractional part of it; but he had secured the option from rivals, against whom he had a grudge. He wanted to break them. The desire was on a par with his actions, and showed the despicable character of the man. Not only was he conspiring to bring want and destitution upon humanity; but he was too avariciously grasping to even allow a share in his expected riches to the man whose brains had given him the opportunity. In addition he was plotting to use this chance to exercise his private spite and revenge. Truly Isaccson was a worthy representation of Shylock and a fit subject for the attentions, later, of the Devil.

The panic on 'change eased eventually; but the price of wheat did not sink. Rather it rose higher, because it soon became apparent that the locust plague was world-wide and very devastating. It became increasingly certain that a state of food scarcity was developing in comparison with which the famine in Egypt in Pharoah's and Joseph's days was a time of riotous plenty.

It was no wonder that the price of wheat, and other food products soared. The sky soon would be too low to be the limit.

THEIR work done, and only the period of waiting to be filled in, Heintz and Thorpe sat in their elevated office and whiled away long hours in yarning, smoking and making calculations—of profits.

"She's up two-eighty now, and still rising," said Thorpe as he consulted the latest price quotations, 'She' being the price of wheat.

"That means a sure profit of two hundred million and a possibility of a thousand million more." Heintz chuckled. "Though we won't get that. All those guys we got options on will go broke flat out. We might get ten per cent., but not a cent over."

"Aw, don't be greedy, Milt," said Thorpe. "We're gonna get plenty kale out of it. . . . By the way, just exactly what is our split to be; and when do you figure on selling out?"

"Well," replied Heintz as he sat up with just the glimmer of anxiety twitching his mind, "I'm not so sure. You see we made a fifty-fifty arrangement to split with Pancrast, but he considered we needed a lot more capital than he could command, so he brought in Isaccson and three other money bags, when we were both away. We've been so busy since then, that I never gave a thought to the fact that this would alter things a bit. I conclude we'll split with him as arranged; but he's probably put us in on a better footing. Considering how greedy these big guns in the financial game are, I reckon all we can look for is about ten percent between us. Brains doesn't get a look-in where money talks."

"You're sure right, boy, it don't," said Thorpe rising. "I'm sick of being in here now, I'm worth a sure ten million. So let's go and see this guy, Pancrast, and get the low-down on when they're selling and what our rake-off is to be."

"Sure, replied Heintz, also rising, "but we'll stroll around and see Isaccson. He's president of the Syndicate. He's the best one to talk to."

ISACCSON'S offices were in a building which was neither smart nor up-to-date. It was an untidy collection of dirty rooms in which poverty-stricken clerks toiled silently. Isaccson had built up his wealth by penurious scraping, and salary cutting, and the habits of a lifetime stuck.

It was with great difficulty that they got an interview with the great one. A nervous secretary did his best to

bluff them off; but, a suspicion pricking him, Heintz was insistent.

Isaccson turned around in a swivel chair from a scratched cylinder desk.

"Well, my friends, what can I do for you?" he asked, an oily smile doing its best to mask an underlying expression of antagonism and suspicion.

"Well, Mr. Isaccson, we just dropped in to have a chat upon matters. The price of wheat seems to be skyrocketing. We ought to be standing in to make quite a big wad," said Heintz in his most casual and pleasant manner. "I was wondering just how high you figure to let prices go. It seems to me that they've gone high enough for a thumping big profit. How'd you feel about it?"

As he spoke Isaccson stiffened, and an ugly snarl began to give ferocity to his cold mouth. This interview he had known to be inevitable, so he did not shirk it; he was at least no coward.

"That is a matter I could not discuss with you." he replied. "That is for the syndicate to decide on—not with its former employees."

"Eh?" Heintz jerked out to be followed by Thorpe in a tone of excitement and anger.

"Former employees? I don't get you."

The senior partner of the pair restrained his more impetuous emotions. He cooled down into deadly calmness.

"Do I understand you correctly when you say, 'former employees?'" he asked icily.

"Exactly," replied Isaccson.

"Do you not know that my partner here, Mr. Thorpe, and I originated and organized this wheat deal. It was all our idea. We invited Pancrast in on a fifty-fifty basis. He let you in later. Yet now you have the insolence to tell me that we are or were your employees. How d'you figure that out?"

Isaccson conjured up a very superior smile, a smile which was meant to be urbane and ingratiating, but which was not.

"My dear boy, you have not got a patent on this idea of yours, you know. I do not doubt that you made some arrangement with Pancrast, but not with me. I—you must get this into your mind—cannot shoulder Mr. Pancrast's obligations. I organized this syndicate to buy wheat; but it had no connection, no connection whatever, with your efforts to perform some miracle with locusts. That, I should say, seems to me to be really a conspiracy against the people of this country. I decline, absolutely, to be mixed up in it. . . . It is a criminal offense, particularly punishable."

Seeing the trend of the financier's remarks, Thorpe impetuously broke in:

"You dirty crook. Didn't you have us buy up wheat for you? Isn't that being mixed up with us?"

"Unfortunately I did." assented Isaccson. "But then I took you over at Pancrast's advice as part of his organization. If I had known then, as much as I know now, how deeply you were involved in conspiracy against the nation, I certainly would not have done so." Then, silencing another outburst, he went on. "There is still some settlement to be made—salary, I believe, over-due. I have been waiting to get the figures from Pancrast, and then we shall be. . . ." He did not finish.

Impetuously Thorpe had sprung at him. As if they had been specially hidden there, two burly roughs came from behind a screen with pistols in their hands.

"Put 'em up," one cried, and just twenty seconds later Heintz and Thorp were lying in a huddled bundle outside Isaccson's office, where they had been thrown by his guardian toughs.

Heintz picked himself up, silent with cold fury. Thorpe was not so restrained. His criticism of their treatment was loud, vitriolic, blasphemous and expressive. It was the sort of language which all respectable journals put in asterisks, queries and exclamation marks. It was unquotable—unprintable.

"Let's go to Pancrast and see if he's the one who double-crossed us," said Heintz at last.

Pancrast was expecting them; Isaccson had 'phoned him. It was not a peaceful interview; in fact it was very boisterous. It was not a very long interview or a very wordy one. In reply to Heintz's cold, direct question, Pancrast had taken the same line as Isaccson.

"Certainly we made an arrangement to buy wheat. But when we did so, I really misunderstood your part. What you attempted and accomplished was sheer criminality. I could not countenance that. No, you can consider that agreement so much waste paper. My association with Mr. Isaccson is a thing quite apart."

"Then we'll prosecute you for violation of contract." cut in Heintz.

Pancrast smiled.

"And get a nice, long sentence up the river," he sneered. "No, you won't. You see you are a pair of crooks, and you've been beaten at your crooked game. . . ."

He never finished. Thorpe's fist shot out, and Pancrast performed a feat of quick transposition from behind his table to a sprawling position in a far corner. At that moment, Isaacson's two gunmen came hurriedly in, sent by the latter in case of trouble.

Then the mix-up became a merry tangle for about thirty seconds. Thorpe was the hero of his side. He landed off Pancrast's table feet foremost into the middle of the first gunman's alimentary department; and that man went down with a gasping thud. But in settling his antagonist he slipped and fell. If Heintz had been as sturdy a fighter as his partner, the pair might have done some real damage, but he was not. He went down before the second gunman's first blow. Then before Thorpe could recover he was gripped and held in an iron hold. Pancrast had by this recovered.

"Throw 'em out; both of them," he ordered. Then to the victims of his duplicity he added. "You boys had just better beat it. See? If not we put the Federal authorities on to you. We can and have squared ourselves. Take this as a good steer and beat it, or you'll be bumped off somehow. . . . Out with 'em."

"You double crossing crook and hi-jacker," cried Heintz as he went spinning out. "I'll get you—even if I go to the chair for it.

WHEN harvest time came in the Southern states not five percent of the farmers had a bushel of wheat to ten acres. The harvest was a total wreck. In most cases the fields had been reaped by the locusts so completely that bare earth alone was left. In other cases there were a few, a very few, isolated stalks left to bear ears of grain. Further North the devastation was worse. Here there was ruin—stark, utter ruin. For in addition to wheat every green and growing thing had been

stripped to uneatable stalks or razed level with the ground. And so the same spectacle was to be seen right to the northern limits of the cultivatable area. Here, on account of the cooler climate and later Spring, matters were not quite so bad. Still the locust plague, was a visitation comparable only to the great plague in days of Moses among the Egyptians in olden times.

By this time the same condition of things had occurred in Russia, where the *Locusta migratoria* of Turkestan had thoroughly justified his reputation as a vandal. Russia, Turkey, Egypt and India had been over-run from this base. Again there was sterility here.

Then to augment the very deep anxiety at the certainty of a world-famine, came news of further plagues in South America and Australia. That information completed the panic. It was made more terrifying because of the fact that so many kinds of foodstuffs were short in supply and thus famine was imminent. Naturally there was considerable speculation in prices. The wealthy expended vast sums in hoarding, and gigantic corporations tried to secure immense stocks of any and every eatable commodity.

Naturally prices soared to heights hitherto undreamed of. Since this was a world crisis, the governments of any particular state did not think it expedient to intervene, not in the early stages, while in the smaller countries untouched in certain food stuffs, there was special activity to make profit out of the destitution of other nations.

With prices of wheat up to ten dollars and a quarter, the Wheat Buying Syndicate considered the advisability of selling; but Isaccson, who held the controling say, refused. His overwhelming greed would not allow him, till the last dollar could be squeezed out of a suffering public.

Unexpectedly the majority of the brokers had long before delivered their quotas of wheat. Since a suspicion had arisen early that some one was trying to corner wheat, frenzied attempts were made to discover what was doing. With such a gigantic deal as the millions of bushels, it could not be kept silent that Isaccson was behind it all. That fact early intensified the fear of being caught short, so quite early most of the brokers procured their wheat and delivered it to the Syndicate—deals rendered possible only by the immense surplus stocks all over the world.

Consequently the Syndicate had stocks of almost five hundred and fifty million bushels. At ten dollars and a quarter a bushel this represented a sum of five thousand six hundred million dollars. A sum so collossal that all the members felt breathless. They gasped at its immensity. Yet Isaccson sat like a cold, icy image and resolutely refused to let them grasp these mammoth riches. Even the difficulty of financing so great a deal did not move him. "Our credit is good," he said, and "wheat will rise to twenty and perhaps twenty-five dollars," he said. "Don't throw away good money by being too pannicky." And having given that decision nothing would move him.

Naturally this churn-up in commerce disturbed the whole trade relationships of the world as no other crisis could do. The invasion of the insect world was far more terrible in its effects than a war between nations. At first there was feverish anxiety to buy, anything of edible value, anywhere, wherever it was for sale; but that state of affairs did not continue long. It changed very quickly to a deplorable slump in all industry generally.

AS food prices went up to famine altitudes, and as wages could not, naturally, increase proportunately, there was starvation and destitution everywhere.

The Communist element and such Red disruptive agents, scattered everywhere, seized upon their opportunities with unholy joy. A man who is hungry and has starving children at home, will listen to promptings to revolution and anarchy with a willing ear, particularly when those ideas are woven up with specious stories that all this is just another insidious move by the capitalists to enslave the working class.

The unthinking and half-educated masses were told of ample stocks of food, hidden in storehouses and factory buildings, and they were incited to go and get it. Riots and strikes, looting and vandalism, grew in frequency as these suggestions went from one to another. Red agitators had long before learned the value of 'suggestion' as a force to influence the unthinking. And so, after these whispered tales had soaked in, many brazen, revolutionary leaders sprang up to lead small bands of discontents to loot and destroy in a mad lust for destruction. None of these however were more than occasions of isolated, petty disturbances. Something bigger was coming.

Heintz and Thorpe had gone back to their office to plot and brood; but here they were disturbed by Federal detectives. Isaccson had thought fit to send a hint of their actions to the authorities—for his own protection. Being wise to this they managed to escape, and in hiding they brooded over their grievances, rankling and irritating, as the were. Heintz saw his opportunity in these numerous, ineffective riots.

"We'll get into this," he said to Thorpe. "And we'll hand out to this double-crosser the wallop of his career."

"Sure, boy, we just will. We'll knock him to Hell," agreed Thorpe.

Their decision got action. A little careful investigation gave the two men the information they wanted, and they joined up with the Reds. Their object was to lead rioters to destroy the stocks of the Wheat Syndicate.

Though Heintz was a good organizer and plotter, Isaccson was a master at the game. Early he had used his influence to put himself right with the government. First of all he told the rather incredible story of Heintz's plot, and then stated blandly that, believing it himself and fearing that no one else would, he had taken precaution to buy all available stocks locally and in foreign markets. He declared he had thus done his bit to secure the people of the United States against actual famine. The authorities investigated his story, and, finding it was built upon fact, decided to arrest the plotters; but by this time Heintz and Thorpe had got away into hiding.

The publication of these facts had the effect of raising Isaccson to the altitude of a national hero. As yet the Syndicate's wheat had not been offered for sale.

"Let the other fellow sell off first." Isaccson had advised the other men. "The longer we wait the higher the price will go. It is now fourteen point fifty dollars. Every day means millions more."

"How about danger from these Communist gangs looting it?" asked one of the syndicate members.

"Not likely to do any harm," was the reply. "I got in so good with the government, that now we got police and the military guarding it. No. Don't you worry

none. We're O.K. that way. The U. S. is playing for us."

Since Isaccson was such a commanding influence, the others let it go at that. Also, they, too, were becoming obsessed by the demon of greed. The collossal wealth that they possessed was making them delirious with the wonder of it all. As wheat was rising hourly, it was going to take a big wrench to make any one of them now agree to sell. Making millions by the mere process of doing nothing was a very fascinating business. Reading price quotations had become a very engrossing pastime.

WITH consummate cunning Heintz wormed his way into the very heart of the secret Communistic organization. They were suspicious at first, but his notoriety as the man who had instituted the locust plague put him into favor at once. Then he began a carefully constructed conspiracy at a revolution. For the time being the isolated riots were called off; and the whispered word went around that every courageous man who wanted freedom, food, ease and every other human satisfaction, should get possession of arms and be prepared to fight.

Though the greater portion of the Syndicate's stocks were held in bulk at the different shipping ports, yet there was enough stored in the vicinity of its office to give a colorful background to Heintz's story, which was that Isaacson had immense, hoarded stocks, and that they would start off by raiding it. This was the first objective.

Word went around quietly, and in response thousands of starving men and criminal gangsters gathered for the raid. Few had weapons of any value, so their first act was to raid shops that were stocking arms and ammunition. Then the rioters moved onward.

Previous to the stoppage of the smaller, isolated riots the police had been kept busy. The period of peace, they considered, indicated that they had put them all down. Heintz's new and greater disturbance took them by surprise.

The leader's aim was directed at the offices of the Syndicate, and particularly at Isaccson and Pancrast. These offices were situated on the corner of a block near the wharves, since Isaccson's business was mainly shipping. Heintz had all the qualities of a great general, and Thorpe was splendid as a squadron leader.

The building to be attacked could be approached in four ways, so Heintz divided up his mob of unruly followers and sent a party to positions where all could converge down upon the objective, and where they would be safe from counter attack.

Within Isaccson's office a turbulent meeting of the Syndicate was taking place. Wheat at the latest quotations at the close of yesterday's sales had stood at eighteen dollars seventy-six cents. Pancrast and another member named Johns were tremblingly fearful of the collapse of the market, due to so much rioting. Isaccson stood firm for twenty dollars as a minimum price for selling.

"I tell you that we stand to become the richest men on earth Five-fifty millions at twenty dollars, what's that?" he asked and answered himself. "Eleven thousand millions. And you scared chickens want to throw it away."

"No fear, we'll stick to it," cut in another man named Jacobson.

"Where'll it all be if these mobs get onto it and loot it all? Wheat burns better than coal." said Pancrast.

"Well, why not *us* sell our shares?" said Jacobson.

"And have you ruin the market? Not me." Isaccson objected strongly. Twenty dollars is my limit and it's just sheer folly selling then, when the price could as easily rise to twenty-five or even to fifty dollars—if we stick out."

"Well we won't," cut in Pancrast. "If we do the famine will be so bad that the government will confiscate it or the rioters will loot it. No we sell as soon as the market opens today. I move that."

"Well . . ." began Isaccson, when a flurried clerk came in. "Get out," he ordered. "This meeting's strictly private."

The man did not retreat.

"There's a mob coming down on us, and another . . ." he stated.

"Then 'phone the police, and get out." Isaccson ordered.

"That's their job—quelling riots."

Before any further action could be taken a stone came hurtling in through the window, spraying shattered glass all over the meeting table. All sprung up in alarm. Then the crack, crack of automatics sounded below; and the spitting smack of a dozen bullets as they bored holes through the glass of the window.

"God, man, you've left it too late," cried Pancrast. "The mob's here now."

"But the wheat isn't," Isaccson snapped back with spite. "That's safe enough."

"It'll be little good to you, though, when a bullet's turned you into a stiff," Jacobson interjected. "Look at the gang down there. There's thousands and they mean business."

The mob certainly did. Already the leaders were banging at the shut doors, while the excited crowds were yelling, "We want wheat. Come out, Isaccson, and tell us where you've got it." A group of three, small elevators stood upon the waterfront, a block away, and Heintz directed the bulk of his army towards these grain stores, while he and Thorpe, with a select few, went in upon his private vengeance.

The five of the Syndicate were cornered in their meeting room, when in burst Heintz, Thorpe and a few gangsters.

"Heintz," "Thorpe," cried Isaccson and Pancrast in chorus as they backed in fear to the further limits of the room.

Their assailants made no remark. They simply dashed forward with the gloating joy of revengeful men who see the long-anticipated hope of vengeance just within their grasp. But their two antagonists were not quite helpless. Suddenly each groped in his pocket and two, wicked, little automatics appeared, and began to spray out their deadly, little pellets of death.

Neither Isaccson nor Pancrast were expert marksmen, while both were flurried, so their enemies were not stayed. On the other hand Heintz and Thorpe were no better, so quite a spirited pistol duel was waged without harm to the principals, though one was hit badly, as were some of the rioters.

Then Thorpe in disgust threw his empty gun at Pancrast and dashed forward.

"You dirty crook," he said, "I can't hit you; but I'll get you just the same."

Pancrast ran. The room was large; it had once been a store-room; and there was opportunity to dodge; but Thorpe was an athlete. He bounded after his quarry,

leaping chairs and tables which Pancrest tried to place between them. He finally sprang upon his man, threw him down and sat across his body, both hands firmly clamped to his throat.

"You'll double-cross us, will you?" he hissed down at the terrified and helpless man. "Then take that for your profit." 'That' being a bump of his victim's head upon the floor. Pancrast was helpless. Thorpe sat astride his body, a knee pressing down upon each hand. He could do nothing. His face was purpling and going black with the choking. His days were rapidly ending.

Heintz was less impetuous. He saw his marksmanship was faulty; but he did not throw away his weapon. He reloaded and advanced slowly upon Isaccson, his special victim. Isaccson tried to dodge. He cursed the neglect of his two gunmen, who had apparently deserted him. Heintz blocked all efforts to escape and finally backed his prey into a corner. He had a full gun; the other's was empty. Though full of bluff and impudent courage when he held the winning hand, now, all his bluff called, Isaccson capitulated and abjectly cringed.

He sank down in the corner, his arms held before his face as if in protection.

"Don't," he pleaded. "Don't touch me. You'll get your share. I always meant to give it to you. D-o-n-'-t." The plea ended in a pitiful shriek, as Heintz, cold and merciless, stood off and levelled his gun with cool care.

"You had your chance. We let you in on a scheme to make millions. You double-crossed us. You cut us out of any share in the deal; you put the dicks on to us to secure yourself; and you let all your partners in, being too greedy; and now you're going out to it yourself. One." He said as he fired the first shot which pierced his victim's arm. "Two." He fired at a leg. "Three." The shot struck another non-vital spot. "Four." Each shot was fired with a venomed hate, calculated to torture physically. Finally the last shot was placed coldly, cynically, in the squirming victim's brain.

As Heintz turned away, Thorpe also rose, leaving Pancrast dead on the floor. Just at that moment Isaccson's two gunmen managed to burst their way in. They summed up the situation in a flash; and their guns spat out vengeance which did not miss. Thorpe and Heintz both sank down, defeated in the very moment of victory.

During the few seconds of time which saw the beginning and end of this drama, the followers of the dead men had crowded into the room. Those with guns had used them with deadly effect. Many of the Syndicate's office staff and the three remaining members of the wheat buyers had been killed. Now a wild, scrambling melee began with the two gunmen. A filing cabinet was knocked over and a shower of correspondence deluged the room. One of the raiders saw a chance for a big finale to the fight. He struck a match and touched off the papers.

In the matter of minutes the old, dry, worm-eaten building caught, and blazed into an inferno of leaping, exulting tongues of flame. The fire cut off most of the attacking, fighting raiders and so they all perished—millionaire and pauper, conspirator and victim, wrong-doer and avenger, in one vast furnace of purification. The fire destroyed all deeds and documentary evidence of the great wheat corner, and of the ownership of over five hundred million bushels of wheat. Thus the great conspiracy came to an end without benefit or advantage to anyone.

LED by Red leaders, the rest of the mob had attacked the elevators. In a few minutes they had been broken open. Though most of the rioters were hungry, the aim of the Reds was destruction, so promptly the precious food-stuff was sent roaring up in another furnace fire. Then the really leaderless mob split up into indiscriminate looting. Divided thus they were easily dispersed by the arriving forces of law and order.

Though fateful in the death of the actual instigators of this world-wide state of famine, this attack was full of other evil consequences—it gave the Red leaders a new objective—that of attacks upon food supplies all over the States. Many valuable stores of food were thus sacrificed before they could be rescued.

This was a benefit in disguise, for in the long, lean months of starvation which followed the excitement of the rioters, the mobs cooled down to see how futile had been their Red leaders, and in the long days of remorse and repentance which followed, the deluded victims forever renounced the dominion of these criminal agitators. It takes trial and tribulation to bring people to see who is a sane councillor and who is not.

THE year drifted through. Most of the nation's food supplies had been commandeered and now were rationed out to a starving population. In the fall a further deadly menace came in billions and billions of laying locusts. In comparison to the earlier plague there were now ten to a hundred times the number. This dreaded menace was universal. It was threatening all the world. Civilization was in prospect of being wiped out.

Since practically all business, industry and trade had ceased in the awful stagnation of world destitution, authority called up all labor—man, woman and child—in a war against the dreadful danger. Armed with chemical destructors, grubbing tools, sprays, the whole of the fields and apparent laying places were scarified and scarified again and again in the effort to stamp out the impending danger.

It was practically in vain. There were so many little hiding spots and the army of destruction was so unskilled in locating them, that when the spring came, the hopping enemy appeared in numbers even greater than ever. Though again desperate efforts were made, the numbers were so great and the area so large, that little effective destruction was accomplished. Again disaster came upon a world almost incapable of standing up against it.

PROFESSOR SCOTT had got over his disappointment at want of public recognition of his achievement, when he was considerably astounded at the first notice of the locust plague. Since Heintz had begun his stimulating at a spot almost identical with the place where he had himself experimented, Scott wondered if his own experimenting had energized the insects. Later on, when the menace was in evidence all over the world, he knew that some other, malign influence had instigated the plagues.

Investigating the great migrations, Scott found that *Melanopus Spiratus* was the chief menace in America, that particular locust having recovered its former devasting abilities with added activity. In Europe, Asia and Africa *Locusta Migratoria* had done most of the trouble there.

Eventually it became known, that Heintz had caused the damage. Then Professor Scott knew that he had been innocently the culprit.

"My Stimulator inspired the locusts to breed and destroy. I must try and discover a ray, which will soothe them into inaction," he thought. "I'll get moving at once."

Though he and his friend, Professor Mencke, worked feverishly, night and day, they failed absolutely to achieve their object.

"We'll have to attack the danger from a new angle." Scott said as he sat dejectedly gazing at their latest, ineffective model.

"How about a call, a sort of mustering call, which would draw the locusts away from the crop-lands, out to sea, or somewhere, where they will die before they breed again," suggested Mencke with slow deliberation.

"Sure, that's the idea. I think you've said a mouthful," cried Professor Scott with unprofessor-like expression.

They set to work on those lines, and at last, when the world was almost at its last gasp, they produced their "Directocall."

"Get some hundreds made and send them all around the world."

Mencke, the machine designer, instructed his workshop foreman when the apparatus was brought in, tested and approved by Scott.

In America the locusts were reaching the flying stage. In millions they had wiped out another harvest, even the cotton crops and most of the fruit and vegetables. They promised also to devastate the Atlantic coast, which so far had been little harmed.

"We must destroy them before they breed," Scott decided.

Remembering his desire that each insect should be harnessed to do some good to humanity to balance harm, Scott decided to place his Directocalls in different sterile areas.

In such areas as the Staked Plain of Texas and the Death Valley of California, powerful electrical stations were set up, and the waves of the Directocalls sent out.

Almost instantly observers on the devasted fields noticed a marked movement amongst the insects. Then from the fields they began to rise and head off in a cloud-flight to the center of the inspiration.

This response was wonderful, yet almost tragic. The first arrivals flew dashing up to the calling instrument and alighting to sit upon the ground, all facing inwards like a congregation before an open-air orator. Then other, later arrivals, came fluttering down upon the top of these early worshippers at the shrine. In no time they were buried layers deep beneath the later comers, who in their turn were smothered beneath other arrivals.

Before long the instrument itself was buried under the flocks of insects, which came flying along in a seemingly unending flight. At that stage the attendants at the electrical station were in danger of being overwhelmed. They had to retreat while the engine of their motor was left to run as it would, till at last it was choked to stillness by the thousands of insects, which entangled themselves in its wheels, belts and cogs.

This state of affairs was going on in a dozen other centres of the continent, and repeated again in many other countries of the world, till at last every locust was called in to die around one or other of the many Directocalls.

The world was saved, and soon again the green fields waved and turned to gold, and again a starving people fed.

This time the world did not pass by the achievement of Professors Scott and Mencke, without realizing their work. This time the people of every country and every clime read of their achievements with baited breath; and when all was over and the myriad insect foes had been conquered, they gave them the very fullest of their thanks.

In collecting so many dead insects upon barren lands the Professor had achieved in part his dream. The dying and decaying bodies had fertilised these arid spots and in addition to defeating an enemy he had added materially to the world's productivity, by making many unfertile tracts blossom as the rose. So out of a vast evil had come good. In death the locusts had done something to offset their former destruction. So Professor Scott's hope of insects doing some good came to pass.

THE END

In Our Next Issue

THE TREASURE OF THE GOLDEN GOD, by A. Hyatt Verrill. This author is a celebrated explorer; much of his work has been done in Spanish-speaking America. This story will be found one of his best.

BEHIND THE END OF SPACE, by John W. Campbell. Space in Relativity is a queer mathematical conception. This favorite author takes us boldly to where space ends.

DELILAH, by Margaretta W. Rea. A striking story of artistic life, depicting the psychology of a highly strung artist and his rescue from despair.

OMEGA, THE MAN, by Lowell H. Morrow. The title of this story indicates "the last." We are told of the last surviving humanity on this terrestrial globe.

And other unusual scientific fiction.

The Vibration

By Edwin K. Sloat

THE strange development of terrestrial explosions at regular intervals is distracting the world. None know where it is to end; none know the producing cause. The greatest scientists do not know what to do about it. The last lines of the story give the exciting finale.

A VIOLENT tremor shook the house. A bit of plaster above the window thudded to the floor, followed by the soft chatter of loose grains. George Darrell started up from his arm chair, glanced instinctively at his wrist watch, breathed a curse, and sank back. He caught up a handkerchief from the top of the desk beside him and wiped his face. At least, there would be an hour's respite now. There was always the lapse of an hour between tremors.

The big door behind him screeched open, eloquently complaining of the effect of the tremors in throwing the frame out of line. Darrell swung savagely about in his chair, and scowled at the grinning face of his secretary, Jimmie Evanger.

"You're getting jumpy, George," Jimmie reproved him, with an easy familiarity that spoke of a close friendship of the two, aside from the positions of employer and employee.

"Who wouldn't be jumpy with that damned vibration pounding regularly at the nerves day and night," retorted Darrell irritably. "I notice you're not so phlegmatic yourself these days."

Jimmie continued to grin cheerfully.

"You'll forget all about it when you hear of the break you just got, George," he promised. "One of the swellest girls that ever crossed the threshold of your big front door just arrived. She's a dream, believe me—slender, blue eyes, blonde, but none of your wishy-washy females. She has a chin that means business. Beautiful, George, beautiful——"

"What do you mean, crossed the threshold? Say, what am I paying you for, anyway? Didn't I give pointed orders to everyone in this establishment that no one is to be admitted to disturb me while I am working on this accursed vibration problem? I tell you, Jimmie, it's going to wreck the world! It's doing just that thing now! Have you looked in on the televisor lately? Or read the papers? Here, look at this!"

Darrell propelled his lithe body out of the comfortable chair with an effortless movement that suggested powerful, coiled springs in action. He crossed the rug-cushioned floor in three long strides, and snapped on the current of the built-in televisor set near the fireplace.

The four-foot screen turned to a dull, luminous gray which faded into silvery white. There grew on it hazy, indistinct outlines of people which shortly proved to be a meeting of the Blue Laws Association of Kansas in session at the State Capitol at Topeka. A stern-visaged man was outlining a campaign—one of the many—to rewrite the prohibition law into the Federal Constitution, where it had been many years before. Darrell gave an exclamation of impatience and tuned in the World Televisor Station in New York which was broadcasting news.

Vesuvius' maw—an aerial view—flashed before them belching steam, smoke and ashes, while the rumbling roar filled the entire room. Then the scene flashed to Mont Pelée, another inferno of seething, molten rock, followed by a longer view of the denuded, lifeless countryside about the mountain. Then scenes from Japan, showing Tokyo levelled by earthquakes, and a pall of volcano smoke hanging like a shroud over the suffering city.

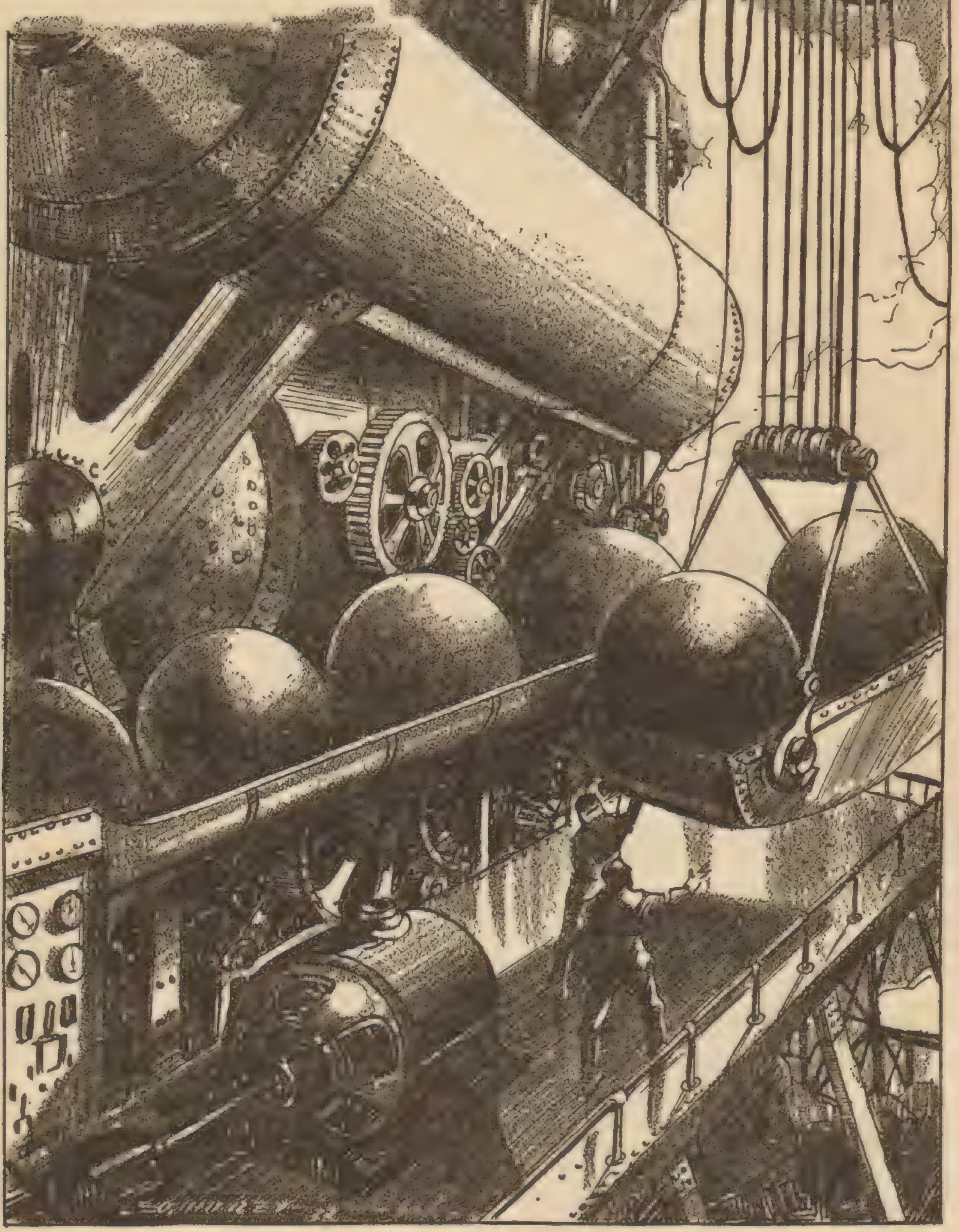
There were two new volcanoes close to Yokohama, which had sprung up almost overnight. The loss of life in Japan alone, the televisor operator's voice cut in, would run into hundreds of thousands.

The scene flashed back to the World Televisor Building studio. One of the editors appeared with lengthy, typewritten statement.

"Conditions are growing alarmingly worse throughout the entire world," he began, referring to the paper. "From every portion of the globe come the same reports of The Vibration, which hourly makes itself known by a sharp temblor. These temblors, or vibrations, were first recorded as faint disturbances more than three weeks ago on the seismographs in various parts of the world and have been steadily increasing in violence—alarmingly so within the last week. Some of the results you have just witnessed. Others will be shown to you shortly.

"It is advisable now, I believe, to mention a few of the outstanding phenomena and disasters, because, although we intend to present views of them all, others may crop up which will force some of them off the screen. Tidal waves are sweeping all oceans intermittently and lashing the shores of all continents and islands. A wave yesterday swept over Battery Park here in New York and sent a wall of water a yard deep up Broadway and Fifth Avenue. Shipping terminals suffered damages running into millions, and a consid-

They were about to leave the turret when they saw a small freight-hoist rising from the ground to the platform and carrying two bombs. The hoist stopped at the edge of the chute.



erable loss of life followed the property damage.

"From Yellowstone National Park come reports that the geysers, old and new, have begun to vomit lava. Tourists are rushing out of the park as fast as possible. A World Televisor reporter is now on his way to the secene in a fast plane, and we shall shortly be able to give you first-hand information.

"Extinct craters in California have come to life, and in South America, Ecuador has become a land of Inferno. It is estimated that nearly half of the population has perished by lava and earthquake. A mountain has slid into the Pacific and disappeared. The story of Ecuador is also a story of the Hawaiian Islands—smoking lava, death, the pall of clouds that turns midday into ghastly twilight.

"Greenland and New Zealand report that tidal waves are breaking up the glaciers of the Arctic and the Great Ice Barrier of the Antarctic and sending out to sea great fleets of icebergs to harrass the ocean shipping.

"In New York and Chicago, as well as other metropolitan cities, the number of high buildings that are beginning to show signs of collapse under the continued hammering of The Vibration, is increasing. The names of these buildings will be read later. All have been, or are being, abandoned, and persons are forbidden to enter the danger zones established about each building. The old Harcman Tower, in New York, its one hundred stories dwarfed among the later, mightier buildings of the metropolis, was the first to go. It crashed to earth this morning. Our reporters were able to give a sensational scene of its collapse. A photo-audio film was made, and will be repeated at five o'clock this afternoon in the day's news summary.

"Meantime, scientists of the world have been able to throw little light on the subject. Neher in Berlin today voiced the theory that atomic disintegration at the center of the earth may be responsible for The Vibration. Astronomers have advanced a theory that it may be caused by a disarrangement of cosmic laws due to sun spots. This theory is not generally held.

"The most plausible suggestion comes from the geologists, who say that volcanic action, or an earthquake, may have opened a fissure which allows a vast amount of sea water to filter down into the earth's interior, where the pressure of the steam periodically forces it out of another fissure in a gigantic explosion. This theory, popularly known as the 'Ocean Fault,' is accepted because it gives the most plausible explanation of tempo of the vibration which is now timed exactly with the vibration wave length of the earth.

"In closing this brief review, we should add that scientific men and the governments of the entire world are combatting with the problem. There is only the slenderest chance that anything can be done to save civilization and prevent the earth's crust from bursting apart under the strain. Whatever may be the cause science is agreed on the ultimate result—the destruction of the earth's crust and with it mankind and all life."

Darrell snapped off the current and flung himself across the room into the chair again.

"There you have it, Jimmie!" he exclaimed. "Everyone will die; the great cities Man has laboriously upraised on the face of the earth will be shaken down; Life will end amid molten lava, earthquakes, tidal waves and floods. And on through countless millions of years the earth will continue to roll in its orbit a dead and lifeless thing. It is appalling, stunning, horrible!"

Jimmie's usually cheerful face was grave.

"I know it," he agreed. "But since it is all caused by a fissure along a fault in the ocean floor, couldn't something be done?"

"Probably, if the fissure could be found. Hundreds of sea craft and airships are hunting for it, but who knows where it can be under the trackless wastes of the ocean? My own plan is to go to the spot the instant it is discovered, determine the depth and engineer the sinking of a vast depth bomb that will break up the fissure further, and thus upset the satanic timing of the thing which each hour adds additional thrust to the vibration."

Jimmie gave an exclamation.

"What about the beautiful lady, George?"

"What lady?"

"The one I told you about, who is waiting downstairs in the drawing room, or was when you started on this rampage against The Vibration."

Darrell snorted angrily.

"Tell her I am not receiving any visitors, and whatever her business is, I cannot attend to it."

There was a rustle and a light cough behind them. Both men whirled about. Framed in the doorway was a golden-haired vision who eyed them composedly and smiled amusedly at heir agitation. Darrell gulped and flushed a brick red.

"How did you get here?" he demanded harshly.

"I merely came up the stairs from the drawing room," she replied demurely. "Something told me that you might try to—er—be out for the day. I really must see you, Mr. Darrell."

"Why?"

She smiled tolerantly at the savageness of the question.

"It's about my father. He has disappeared."

"Go to the police with your troubles! Why bother me? Can't you understand, Miss—er—, can't you understand that my time is tremendously valuable? Even while you stand here talking, the world is shaking itself to pieces under our feet! My job—pitifully hopeless though it is—is concerned with that, and not with the absence of any lone individual, be he president or dictator, when hundreds of millions of lives are at stake!"

"But surely, since we are all doomed anyway, you would be kind hearted enough to humor a girl and win her everlasting gratitude by trying to help restore her father to her before the end comes. He is all she has."

The smile remained unchanged but the azure eyes were clouded, and the determined little chin was trembling. Darrell fumed and tramped to the window and back again. He refused to meet Jimmie's imploring gaze. Presently he halted in front of the girl.

"Miss—Miss—by the way, what is your name?"

"Tulner—Miss Evelyn Tulner."

"Very well, Miss Tulner, allow me to explain my situation. You probably know who I am, and my reputation as a wealthy adventurer who undertakes honorable missions of all kinds for the thrill. That, doubtless, is why you are here. If things were normal, I should be glad to help you. But we—the entire human race—are facing annihilation from this hideous vibration. Where it originated no one knows. No one knows even what it is. Yet the problem must be solved! The Geographical Society has asked me to help. I have

represented them in other things, and they have turned to me now. I am doing all I can, and I simply can not undertake anything else until this crisis is past."

The girl turned wearily toward the door.

"I understand, Mr. Darrell," she said somewhat abashedly. "I just thought you might be a friend of my father. He seemed to know you, and often spoke highly of your accomplishments."

Darrell frowned thoughtfully.

"I can't seem to recall him," he replied. "Yet——"

But the girl was gone.

Jimmie heaved a pensive sigh.

"I can't blame you a bit, George, but it did seem a shame that we couldn't help her."

Darrell was scowling thoughtfully at the window. "Tulner, Tulner," he muttered. Abruptly he swung toward the door as though to call her back. At that instant the house rocked under the impact of another vibration. Plaster again fell from the broken place above the window. Outside on the park-like grounds the great trees swayed slightly. A tiny crack appeared in the cement walk below the window. Darrell cursed and shook his fist at it. Abruptly he whirled about.

"Jimmie, get the Tulner residence on the phone and leave word for that daughter, that I absolutely must see her."

"Okay," sang out the secretary with a grin, not in the least surprised at the abrupt change of plans. He hunted vainly through the book, then as a last resort picked up the phone to call information. An instant later he laid it back on the stand.

"Dead as a burned out bulb," he announced laconically. "That last vibration probably broke the connection. Wouldn't have done us any good if it was all right, probably. Tulner isn't listed in the phone book."

Darrell was already running for the stairs. Jimmie followed methodically. Down the hall they raced and out through the big garden toward the air-field with its massive hangar of rough limestone. Darrell threw open the doors. A moment later his trim, little racing monoplane leaped out of the opening, with Jimmie clinging and climbing precariously into the rear cockpit. Within fifty feet they were off the ground, the triblade steel propellor screaming shrilly under the angry urge of the compact little thousand-horse turbine motor. Up they lifted like a rocket, while the hand of the air-speed meter swung round to six hundred miles an hour and hovered there. George Darrell was seeking action.

The Geogrophical Society maintained a most modern airport on the roof of its office building in Washington fifty stories above the street. Darrell swooped down on it with the abruptness of a hawk, nearly colliding with the departing plane of another member of the Society. There were angry words. Darrell strode off to the elevator, leaving Jimmie to patch up the furious member's feelings, and a few minutes later entered the office of the acting president, despite the excited protests of the office girls that he must be properly announced.

Acting President Radroth sprang eagerly to his feet.

"Welcome, Darrell," he cried extending his hand. "Don't mind those girls. They are nearly hysterical over the prospect of the building collapsing under us. It may. The last vibration shook everything in the office here. Up at the airport above us two elevators jammed. We are moving out this afternoon. The department heads are now at work ordering out the most prized possessions and important documents. Is there any news?"

"Tulner," replied Darrell tersely. "Who is he?"

"You must mean Professor Tulner, the ballistics expert. He is a member of the Society, but I haven't seen him for weeks.

"Didn't he invent some new kind of an explosive?"

"To be sure he did. It is jovianite, fifty times as strong——"

"Where does he live?"

"Long Island. Here . . . Take this address. Wait! Tell me what this is all about!"

"You know as much about it as I do now," Darrell flung back, as he dodged out of the door and ran toward the elevator again.

Evelyn Tulner heard the hoarse shriek of the little plane's propeller, as Darrell swept low over the roof. She ran out on the verandah overlooking the sunken garden behind the house in time to see him bank sharply and side-slip down into the garden with motor reversed to kill his speed. The little craft settled lightly and came to a stop with one wheel in the lily pond. Darrell and Jimmie leaped out. She ran eagerly to meet them.

"You've changed your mind after all!" she cried. "Oh, I'm so happy!"

Darrell nodded shortly.

"Where did you last see your father, Miss Tulner?"

"Six weeks ago, here at home," she replied promptly.

"Where did he say he was going?"

"To meet an old friend in a New York hotel."

"Do you know who this friend was?"

"I am not certain."

Darrell changed the subject.

"Had your father been well before that time?"

"Yes—why, what do you mean?"

"Had he been acting queerly, or anything of that sort?"

She drew herself up haughtily.

"My father was perfectly normal, Mr. Darrell."

"I meant no offence, Miss Tulner," he hastened to assure her with a rare smile that lighted up his face like sunshine in a grey sky. "With everything in the world threatened by this terrible vibration, we cannot afford to pass up the slightest clew, or semblance to one. There is a certain accomplishment of your father that might have a slight bearing on the case."

"You mean his new explosive, jovianite?" she exclaimed, turning pale.

He nodded. She toyed with a ring on her finger.

"You suspect, then, that my father is involved in The Vibration."

"I suspect nothing Miss Tulner, I merely have a theory that startles and amazes me. If things were normal, I should laugh at it. But now—who knows?"

She dropped her hands, and met his eyes squarely.

"I, too, now have an inkling of that theory—woman's intuition, perhaps, or call it what you will. The man, whom I believe Father went to see that night he disappeared, was Sergis Moklov. Do you know him?"

Darrell's forehead wrinkled in thought. Presently he shook his head.

"Moklov was one of the Soviet leaders at the time the Communistic regime went down before the Agricultural revolutionists in Russia ten years ago. Do you remember? He fled to Siberia rather than face certain death at the hands of the infuriated mobs of the new republic. There he hid for several years in an aban-

doned monastery in the San Shan Mountains. Then he slipped away and came to this country.

"He sought out father and made himself acquainted. Father is the type that anyone can impose upon. I met Moklov here at the house one night at dinner. I believe he is crazy. At least he is fanatically bitter against the new Russian republic. Incidentally, he made violent love to me for a short time. I confess this in confidence, Mr. Darrell," she made a wry face. "It may have some bearing on my father's disappearance."

Darrell's eyes were snapping. Jimmie leaned forward to catch every word.

"You say he hid in an old monastery in the San Shan mountains in Siberia? Did he ever describe it?"

"Oh, yes, many times. Or rather he told us over and over how very lonely and desolate the country was—marshlands through which no one could travel, and mountains of barren rock, oven-like in summer, and deathly cold in winter. The priests, of whatever religion they represented, had long ago abandoned the place."

Darrell turned sharply to Jimmie.

"We must have a plane at once!" he ordered. "Get a big one—an earth circumnavigator, if need be. Get in touch with Radroth at Washington right away. He will supply it. Hurry!"

Evelyn Tulner caught his hand.

"You are going to investigate this old monastery in Siberia. You expect to find my father there—and other things! Please, Mr. Darrell, take me along!"

He withdrew his hand impatiently.

"It is impossible! This is a desperate venture—no one knows how desperate!"

"I don't care!"

"No!"

He turned on his heel and strode back toward the lily pond, uncomfortably aware of her pleading eyes on his back. The plane had to be wheeled out on the narrow walk so that he and Jimmine could trundle it around the house to the broad driveway in front for the take-off. He glanced furtively over his shoulder. She was gone. He sighed with relief.

Jimmie came dashing out of the house presently with word that Radroth was getting them a plane at Washington.

"I demanded a turbine-motor Wing," he explained, seizing the wing of the little monoplane and helping Darrell drag it along the walk. "I thought it would make less noise than a rocket ship, and we might need quiet. It will be ready when we get to the Washington Municipal Air-port."

They wheeled the little monoplane out to the driveway. Darrell stole a moment to rush into the house to thank the girl for her information and to promise to send back word of their venture. She was nowhere to be seen. He hurried back to his plane, feeling somewhat foolish, and darted down the driveway and up into the air for the dash back to Washington.

As they landed at the Municipal air-port, another vibration shook the world. Several persons near the hangars were thrown to the ground, and the place was in an uproar. A distant rumbling from the city told of the collapse of some weakened skyscraper.

Radroth was beckoning frantically as the little ship rolled to a stop. Darrell and Jimmie sprang out and hurried toward him.

"There it is, ready to go!" exclaimed Radroth as they came up. "The mechanics finished with it not five minutes ago. Say, Darrell, is there any hope?"

"I don't know yet. I have only a faint suspicion of something. I'll talk to you tonight by broken-wave radio. Come on, Jimmie, where in thunder have you been?"

The secretary grinned cheerfully as he hurried up to them and displayed a clumsy, black box slung over his shoulder by a thick strap.

"Thought I'd take along a portable broadcasting televisor. You never can tell when you might need it. Besides, there is big money, if you can offer the world a news scoop of some kind."

Darrell snorted impatiently and turned to the shining monoplane that stood nearby, pointing majestically toward the western boundary of the field. Its normal load was fifty passengers, but extra fuel tanks had been hastily installed in the passenger cabins, since Jimmie had demanded them, knowing that the ship might be taxed to its capacity for distance before they had access to another fuel supply. It was a Mono Flying Wing, with retractible landing gear and four built-in turbines, the propellers of which projected from the forward edge of the wing.

Up the short landing stage and into the door under the wing went Darrell, followed slowly by Jimmie and his awkward televisor. Darrell never glanced back as he walked swiftly through the forward passenger compartment and entered the control nest. He gave the fuel and oil guages a glance, noted the navigating instruments, then grasped the universal throttle and pulled it open.

Jimmie had barely time to crank up the landing stage off the ground as the ship leaped forward at the tug of her four whirling propellers, ran four hundred feet, then rose into the air and raced away westward.

Darrell at once tuned in the Chicago radio range beam, turned the ship over to the control of the Robot pilot beneath the seat, and in turn gave the control of the Robot over to the radio beam. Then he strode back to the forward cabin.

"You checked the weapons, I presume?" he asked Jimmie.

"I did that before I specified the kind of a plane we wanted," replied Jimmie, busily engaged in testing out his televisor on the World Televisor operator in New York, by sending him televisor 'pictures' of the interior of the plane.

Darrell turned to the ship's televisor set and remained for a time watching the continuous, shifting views from all corners of the world showing the effects of The Vibration, as it was now being termed. Scientists were thoroughly alarmed at last; for the effects had become noticeably more violent within the last twenty-four hours. Reports of appalling losses of life and property damage were mounting hourly. Geologists of the great universities and the governments were convinced that the earth's crust was near the breaking point. A rush toward the Central Plains of the United States had started among the cities, mountains and sea-coasts. Highways were strewn with dead and injured victims of the frenzied rush.

The view was too much. Darrell snapped off the current and strode forward to the controls to give the motors more power.

At nearly six hundred miles an hour Chicago, the mighty municipal giant beside its inland sea, hove into

view. Darrell promptly tuned in the Seattle radio beam. Then he glanced down at the earth two thousand feet below.

The great arterial highways out of Chicago were alive with crawling automobiles. The exodus to the open Illinois prairies had begun. Smashed cars lined the roadsides, piled here and there in pitiful wrecks of two or three family-laden machines, forgotten and unheeded in the mad rush for the open country, while the victims, mothers, fathers and little children, caught in the wreckage, suffered and died.

Darrell looked away, half sick at the thought. He clenched his hands fiercely. If he could be sure that his theory was right! For a moment he debated about radioing the President of Associated China to send out military planes! No! The nations were working out their own plans. He must not upset those plans—yet. Within a few hours he and Jimmie would know for certain. Then he could bring on the war birds in flocks.

Iowa City, Des Moines, Omaha—the old Boeing air trail—passed beneath the ship. Cheyenne. The menacing ramparts of the mighty Rockies. Eighteen thousand feet now. The green side of the Great Divide watered by rains from the benevolent Japanese Current. Then Seattle, half obscured by mist, the gateway to the vast blue Pacific. Beautiful and calm was the country at this height, yet here, too, the motor highways were jammed with fear-ridden people hurrying eastward across the mountains, filling the canyons and valleys with their wrecked cars and broken bodies.

Seattle passed beneath them, and with it passed their last chance for more fuel. Darrell merely glanced at the fuel gauges and tuned in the radio range station in the Aleutian Islands up off the Alaska coast. It was still carrying on, although several of the islands had vanished into the sea and others had become seething volcanoes.

The tiny silver dinner bell above Darrell's head roused him from his reverie. He glanced at it in amusement. It reflected Jimmie's cheerfulness so truly. Darrell arose and walked back to the forward cabin. Jimmie had set up a small folding table with the regulation white linen and sparkling silver, and was waiting.

"It has been hours since we ate," he observed cheerfully. "Radroth didn't miss a thing when he gathered up our food supply. He even got pemmican from some Arctic Exploration supply room. I didn't serve it, however. I thought we might prefer baked chicken from the Airport Café—you know how Henri can bake it—which has been warming in the fireless cooker for the last half hour."

Darrell seated himself contentedly. He had just realized how hungry he was. Jimmie remained standing in wide-eyed amazement.

"Come on, Jimmie, sit down. What's the matter?" Darrell glanced over his shoulder and sprang to his feet again, nearly upsetting the table.

There in the doorway to the middle passenger cabin stood Evelyn Tulner, clad in the same jaunty clothes she had worn when they talked with her in the garden of her Long Island home. An electro-pistol projected from the holster at her hip. She leaned against the door and surveyed them with amusement.

"I heard the tinkle of the dinner bell, and truly, I was so hungry I couldn't remain a stowaway any longer. I come to you on bended knees—or will, if I have to, to get a bit of that chicken. I'm famished."

"How did you get here?" demanded Darrell roughly.

"I have my own rocket racer, and I beat you to Washington. It was only by three or four minutes, though, and I was afraid you might catch me. But I managed to stow away back in the baggage compartment when The Vibration threw everything about the air-port, including the mechanics, into confusion. And now hunger has driven me out."

Darrell scowled.

"I ought to turn back and land you," he muttered.

"Oh, you wouldn't do that!" she protested anxiously. "We're at least five hundred miles out of Seattle, and that would mean a big loss of time. And besides, I have a map that Mǫklov drew, showing the location of the old monastery. It is the only thing I had time to bring excepting my pistol."

"I could find the monastery anyway," retorted Darrell, still frowning.

She smiled sweetly.

"I know you could, but the map will help a lot. And, too, it's my father you are hunting for, and I want to find him just as much as you do—and maybe more."

An awkward pause followed. Darrell was beaten and he knew it. Jimmie leaped into the breach.

"Well let's all eat. This chicken won't stay warm forever. Here's a chair for you, Miss Tulner."

Dawn found them riding high above the dreary wilderness of Siberian marshes. All three were in the control nest scanning the lifeless desolation below, which stretched away on either hand as far as eye could reach, while the plane drifted along at a paltry hundred miles an hour.

"The San Shans should be in sight by now," repeated Evelyn, again consulting the tiny map. She glanced up again. Her eyes swept the horizon and suddenly widened. "There, there! Look!"

Far against the southern horizon there was upreared against the morning sky a hazy blue mass of hills. They could only be the San Shan range. Darrell banked the ship sharply to the left and jerked open the throttle. The faint drone of the quartet of propellers outside sirened up to a scream, and the speed registered by the airspeed meter crept up from a hundred to five hundred miles an hour.

"We've got to slip in unseen and unheard," said Darrell shortly. "Which side of the range does your sketch show the monastery to be?"

"The western side, up near the ridge. Here it is."

Her finger indicated a tiny, crudely sketched square among the peaks. Darrell pulled the wheel back toward him, and they experienced a sensation of shooting upward in an elevator. Six, eight, ten thousand feet. Still they climbed. Finally at twenty-four thousand, with heaters turned on, and the hand oxygen masks with their reservoir bottles held almost continually against nostrils, Darrell levelled off, and presently throttled down the motors to a hundred and fifty miles an hour, as the stark backbone of the San Shans drifted slowly past beneath them. Binoculars swept the naked rock in vain. Suddenly Jimmie motioned sharply and pointed down.

Far below among the peaks stood a drab man-made structure. A thick, yellow haze hung over the place so that it was impossible to distinguish signs of life even through binoculars. Darrell studied its position closely, noted a shadow-filled canyou that almost touched the wall of the place, and then banked sharply away and slid down a long, invisible air hill that carried them to a point four thousand feet above the dreary marshes,

twenty miles east of the hills, and with the peaks between them and the monastery.

"I believe I have spotted a landing place—a little plateau down the canyon close by the monastery," Darrell explained. "There is an elevation, apparently a low hill between the plateau and the monatery, which should hide us. We'll investigate before we land, of course.

"Now that we are facing the most dangerous part of our venture, I want to explain my theory and arrange a plan of attack. First of all, I do not believe that The Vibration is a result of Nature at all, but the hellish idea that has originated in the brain of man. Here are my reasons. If The Vibration originated from steam explosions in an ocean floor fissure, the very nature and violence of the explosions would wreck the fissure in ninety-nine cases out of a hundred and thus throw the explosions out of time. Because they remain in time with the earth's vibration is proof in itself that man directs them. Each explosion, or whatever causes The Vibration, is timed to the split-second part of a minute to follow the crest of The Vibration as it starts back on its hour-trip through the earth and back again. As the effects grow more violent the timing has to be delayed slightly, so as to take place at the right instant, or else the thing would work against itself, like a child who pulls against himself while 'pumping up' in a swing. Nothing short of a miracle could change this timing so exactly in the ocean fissure.

"Evelyn—I mean Miss Tulner—gave me the first hint of the idea when she told me her father's name. Then I checked up and found he had invented a terrific explosive, jovianite, which is fifty times as powerful as the famed TNT of the old days of the World War. Such an explosive would create The Vibration.

"Then she told us about Moklov, the bitter, vengeful, ex-Soviet official, and his secluded monastery in this desolate wilderness. The very man for such a fiendish plan! He probably kidnaped your father against his will and forced the secret of producing jovianite from him, Evelyn. Radroth described your father to me in our conversation by the broken-wave radio last night—mild, gentle, benevolent. That, too, fits in the theory. Radroth also corroborated a report I had heard of a crazy Russian, a huge brute, who shook down the steel framework of a great tower in New York, with some kind of a vibrating device, laughed when two policemen captured him, cracked their heads together, and left them for dead in a gutter, when they tried to handcuff him."

"Moklov would act just that way!" cried Evelyn.

"So I believe Moklov brought your father here to this ancient priestly retreat, where he has rigged up a machine for exploding big amounts of jovianite in time with the earth's vibration. Relentlessly and surely he is shaking the earth to pieces.

"Undoubtedly he has men to aid him, probably refugees from the Soviet regime. They must all be insane to stick with such a task, for ultimately, they, too, will be destroyed. If it were not that your father is held prisoner there, I would be tempted to radio the nearest aviation base to send bombers and blast the place off the face of the globe."

The girl's face was pale, but her chin was firmly set.

"If there is no other way, Mr. Darrell, you must do that very thing," she said steadily. "My father would want you to do that."

The adventurer's eyes softened, and he smiled.

"But I am not sure, either that your father is there, or that Moklov is really making The Vibration. So that is why I am going to land and investigate."

They were now near the mouth of the canyon below the monastery. The titanic gash proved to be nearly half a mile deep and nearly as wide. It was filled with yellow gas. Darrell nursed the big plane along at sixty miles an hour abreast of the rim. Evelyn coughed at the acrid odor that filled the cabin.

"That is the odor of jovianite fumes!" she exclaimed. "I've sampled them too often with Father out at the testing grounds to be be mistaken. They cause a yellow haze, too."

Presently the plateau hove into sight, a broad, mile-long shelf of smooth rock, sparsely strewn with small boulders. With the landing gear down in position and the motors reversed to kill the forward speed, the huge Flying Wing went down easily, its soft, thick tires, like giant doughnuts, taking the jar of running over the boulders without a shock. While Darrell jockeyed the ship around to face the canyon again, Jimmie ran back through the cabin, opened a door and dropped to the ground. He re-appeared almost immediately beneath them. Darrell slid open a window and leaned out.

"Everything is lovely!" shouted Jimmie. "Back her twenty yards to the wall, and set the brakes."

When the maneuver was completed Jimmie was nowhere to be seen. He re-appeared presently from the mouth of a narrow cleft in the steep, hundred-foot cliff nearby.

"I've found a way up to the top of the hill," he exclaimed eagerly. "A regular old stairway, almost. Let's get going!"

Darrell shook his head.

"I'm going by myself," he declared. "You two must stay here and guard the plane."

He remained obdurate in the face of their protests. Finally Evelyn made a suggestion.

"Someone has to watch the plane, of course. That's the easiest part of the job, so I'll do it myself. That will leave both of you free to investigate the monastery. Two will be better than one at such a dangerous task. I'll be safe enough here."

Darrell hesitated. He felt that the plan was good. Yet——

"Can you fly the plane out if you have to?"

"Didn't I tell you that I beat you to Washington in my own rocket racer?" she retorted. "I can handle the radio, too, and shoot. Besides, I'll get inside and lock the doors, which will make me doubly safe."

"That settles it," declared Darrell. "And now for the final instructions. If we don't show up here by dawn tomorrow morning, you'll know we are dead, and that you are in serious danger. Take off down the canyon to safety above the marshes, then get Radroth on the broken-wave set—he'll be waiting—have him send bombers. For the sake of the rest of the world we can't wait any longer than that, but we'll risk that much time for your father's life. Remember: Wait no longer than dawn!"

They shook hands. Tears were streaming down Evelyn's cheeks and she couldn't trust her voice, but she mustered a brave smile as she turned resolutely to the landing stage and climbed to the doorway where she sat mournfully and watched them disappear into the cleft.

The cleft—it was no more than a mere crack in the

cliff—led them up along a tortuous, rough path, until they presently emerged upon a boulder-strewn, naked hillside near the top of a low, rounded peak.

"This is as far as I went," explained Jimmie. "Look out!"

He threw himself flat on his face, and Darrell followed suit. The hill beneath them shook violently. Pebbles, loosened by The Vibration, rattled past down the slope. Then a few seconds later, from the bottom of the canyon came a deep, booming roar.

"Darrell rose grimly to his feet.

"That's proof enough for me," he growled. "If we had old Tulner out of that dump, I'd send for the bombers. Come on."

They hurried up to the crest of the hill and peered cautiously over.

Less than a quarter of a mile away, in a natural pocket between two low peaks, stood a stark, ugly wall of ill-assorted stones, built up to a height of fifteen feet and two hundred feet long. It was one of the four walls that enclosed the stronghold of the now forgotten priesthood. At each corner was a small, enclosed guard house, or turret. The place might have been abandoned, for there was no sign of life, and the wall was unguarded, unless the turrets might be occupied. Darrell decided to chance them, and he and Jimmie spread apart several yards and dashed across the open space with drawn pistols, then separated and went in opposite directions to explore the adjoining sides of the structure.

Darrel chose the canyon side, and peered cautiously past the corner. A long steel trough, or chute, heavily braced against shocks, extended from the middle of the wall down over the edge of the canyon. There was nothing else to see, except a cloud of yellow gas wafting slowly up out of the gorge.

Jimmie had nothing to report. They decided to climb the wall at the corner. It was easily accomplished, since the rough masonry offered plenty of footholds, and presently they found themselves in the little guard house out of which they could look through small, irregular slits over the roofs of low buildings that occupied their half of the enclosure. Darrell stared long at the steel chute he had seen outside the wall on the side toward the canyon.

It levelled off as it topped the wall and ran inward for fifteen feet over a steel platform that was elevated above the courtyard, until it was but two feet lower than the chute. On the chute were half a dozen big, black balls, one behind the other like bowling balls in an alley. A switchboard stood on the wall beside the chute, with a mass of wires beneath, that hinted at an electro-magnet.

Jimmie tugged at Darrell's arm.

"Look over there on the roof," he whispered. "See that trapdoor? Nobody's in sight. We can reach it and go down through the roof inside."

Darrell glanced at his watch and shook his head.

"Wait for the next vibration, Jimmie. It is due in about a quarter of an hour. I want to see how that chute works."

They watched curiously. Abruptly, without warning, the end ball nearest the wall started forward slowly along the chute. It disappeared over the edge of the wall with quickening speed. They heard it rumbling down the steel trough. Then the wall beneath them rocked violently from The Vibration. A few seconds later the crashing boom of the explosion floated up from the bottom of the canyon. Darrell was timing it with his wrist watch.

"Final proof," he muttered. "The explosion at the bottom of the canyon is timed so that it just follows the crest of the vibration wave. Devilish simple, too. The distance along the chute and the drop to the bottom of the canyon remains constant, so that it is merely a question of starting each bomb at the right instant—and an electric timer does that. Doubtless it also corrects any slight deviation, too, that might occur from blasting too deep a hole in the bottom of the canyon."

They were about to leave the turret, when they saw a small freight-hoist rising from the ground to the platform and carrying two bombs. The hoist stopped at the edge of the chute. The two bombs were carefully rolled on behind the others standing in line. Then the men stretched, stepped on the hoist again, and started down to the ground. They were like the crew of a heavy railroad gun far back of the front line, who fire their piece and are little interested in the result.

As they disappeared below the edge of the roof, Darrell nudged Jimmie. The two of them stepped out of the turret, let themselves softly down upon the roof and tiptoed to the trapdoor. It was unlocked. They raised it gently, and peered cautiously down into a gloomy sleeping room with modern cots lined about the wall. It was empty. Darrell let himself over the edge and dropped to the floor twelve feet below. Jimmie followed, and contrived to let the trapdoor drop back into place as he did so.

Darrell strode swiftly to the wall between the cots, and jerked aside closed curtains dimly seen in the gloom. Only empty clothes hooks driven into the mud wall were revealed. He dropped the curtain back into place, and looked about for a door. Its outlines showed nearby.

They pushed it open cautiously and looked in upon a big dining hall. A lone electric bulb burned above a long table strewed with empty vodka bottles. In the corner two men snored in a drunken stupor. Darrell nodded to himself. Here was part of the secret of holding the men to their ill-fated task. Vodka!

Silently he and Jimmie crossed the room to a door in the opposite wall, and pushed it partly open. Darrell, who was in the van, retreated suddenly, then both men stared through the narrow opening.

The room into which they looked was electric-lighted like the dining hall. Moklov had apparently installed a small electric generator somewhere about the ancient structure. Darrell scarcely noticed it. He was staring horror-struck at a huge iron cage suspended by a rusty chain about a black, yawning pit. There was a man inside the cage, a dirty, wasted, pallid creature, whose bony fingers clutched the bars like talons. Darrell knew he was looking at Professor Tulner, Evelyn's father, the famous inventor and ballistics expert.

Facing the cage with his back toward them was a tall, broadshouldered individual, immaculately dressed, and posing with feet jauntily apart and hands on hips.

"And now, my dear professor, when you come to your senses and agree to send for your daughter, we'll see if we can't arrange to remove you from your little nest, and get you something fit to eat. Roast duckling, white bread, cake, wine. Eh, what?"

There was no answer from the cage.

The big Russian rocked back contentedly on his heels.

"I can't fancy the stubbornness of you Americans.

Here am I, Sergis Moklov who is feared in Russia from the Volga to Vladivostock and farther, who has planned to make you immortal—only there will be no mortals left to know it—and you fail to appreciate it. I have taken your pet invention, jovianite, and am wrecking the world with it, something you never thought of. Imagine it—two insignificant men like ourselves bursting the world asunder by ourselves. How your daughter would marvel if she knew it."

"Water, for God's sake!" came a hoarse whisper from the cage.

"Ah, yes, water. I had nearly forgotten it. But we have much more important things to consider. Your daughter, for instance. I cannot radio a message to her and use your name, for fear of putting pursuit on my trail. I tried yesterday to reach her indirectly, but the message must have gone astray. Now you could send a carefully worded radiogram, using a pet name which only she would know, instructing her to charter a plane and come here. No signature would be signed and the world would be no wiser. I could prepare the message for you. Come, come, time is short! Soon it will be too late. You would rather meet the end of the world in comfort, would you not?"

Only silence answered him.

"The pit there below you. It is black and horrible. The walls quake with each vibration. There are only thirty-five feet of rusty chain holding you. It might break. Then where would you be?"

"Water," mumbled Tulner feebly.

With a curse Moklov spat in his face, and viciously kicked off the catch that held the windlass in place. The heavy cage dropped down into the yawning pit with a screeching clatter as the worn links raced through the rusty pulley at the ceiling. It stopped with a fearful jerk, but held. Moklov shrugged and faced toward the dining-hall door. He hesitated, then swung about and departed through the door in the opposite wall. Death's whiskers had brushed him unaware, for had he approached the dining hall, two electric-pistols would have blasted him into Eternity.

No sooner had he disappeared than Darrell and Jimmie dodged into the room and closed the door softly behind them. They leaned over the pit and called softly. There was no answer. Seizing the handle of the windlass they began slowly to inch the heavy cage up out of the hole. It was a long task. Time and again they stopped and listened breathlessly, sure that the creaking of the rusty chain and complaining windlass must have been heard outside the room. It was a long while later when the cage finally stood on a level with the stone floor.

Professor Tulner lay unconscious against the bars; the cage was too narrow to permit him to lie down. When they at last managed to rouse him, he drew back fearfully.

"Water," he croaked.

Jimmie had stolen a water jug from the dining hall, and thrust a cupful through the bars. Tulner gulped it frenziedly, spilling it partly down his chest. In due time another cupful followed, and then a piece of chocolate from Darrell's pocket supply, always with him when he was on an air trip.

When he was able to talk, Tulner recounted a tale of kidnaping, a plane trip from New York to the Monastery, and subsequent torture to make him confess the secret formula of making jovianite, a secret that was wrenched from him only after the nails of his right hand had been pulled out, and feet burned so horribly, that he would probably limp for the rest of his life if he should escape. Later, when Moklov, determined to have Evelyn brought to the monastery, Tulner decided to die. He was near it from torture and thirst when the two Americans arrived.

It was one thing to get the cage up out of the pit, but quite another affair to open it, for the bars had been welded shut as part of Tulner's mental torture. Jimmie wanted to blast them apart with his electro-pistol, but Darrell feared that the cage might possibly transmit an electric shock to Tulner, who in his weakened condition, could stand very little more suffering. They were afraid to chance going out and hunting up the machine shop to steal a file, or oxygen torch. Finally they managed to swing the cage over on the floor, and with the handle of the windlass started in to pry the bars apart.

It was well along in the wee hours of the morning when they completed an opening big enough to haul the professor through—scraping off part of his clothes and skin in the process.

"Now we'll have to hurry," whispered Darrell. "We have only two hours before dawn. Evelyn has her instructions to act, if we aren't back by that time."

He swung Tulner up over his back and followed Jimmie toward the dining hall door. Jimmie pushed it open easily. It was pitchblack inside, a breathless, soundless black. Darrell's sixth sense sounded a warning. He hesitated. Still to turn back was foolish. He knew this route back to the trapdoor in the sleeping room; another route would require more exploration. He closed the door after him and started on after Jimmie.

Suddenly the lights flashed on. Darrell's wrist was seized before he could wrench his pistol free of the holster. He saw Jimmie go down under a pile of men, then toppled and fell himself under the sheer weight of numbers. Hands were roughly tied behind backs, and they were jerked up on their feet, facing the big table.

Before them sat Moklov with eyes aflame and teeth bared in an insane grin. Behind were a score of bearded, drunken men.

"Very clever of you, Gentlemen, very clever indeed, but you figured without your host, as I believe a well-known saying expresses it in your country," Moklov greeted them caustically. He stared at Darrell. "I have seen you somewhere. Ah, now I recall! You are Commodore Darrell, the renowned adventurer, the pet of the Geographic Society in your own country. Many times have I seen you on the televisor and listened in derision to your talks."

He leaned back an cocked his feet on the table, and lighted a long cigaret before he spoke again.

"You are probably wondering how we discovered you. Very simple, indeed. We knew you were in the monastery, so we trailed you down and heard you working with the chain and cage. My bearded infants crave the sight of bloodshed. I had difficulty in restraining them from bursting into the room. But I have a better thought. The old professor was about gone anyway."

Darrell moistened his lips. A terrible fear, not for himself, tugged at his heart. He forced his voice to remain steady.

"You say you knew we were in the monastery. How did you know it?"

Moklov's sneer became more pronounced.

"We found your plane, you fool! Found it on the plateau. I had believed I could not be trailed, but just as a matter of routine I have my men go out daily and examine the plateau to make certain that no plane has been there. And yesterday afternoon they found your ship, a Mono Flying Wing."

He paused to relight his cigaret. Darrell thought he could have screamed. His nails bit into the palms of his hands till the blood came. Jimmie's face had blanched, and even Tulner could not conceal the anguish in his eyes.

"I see you want to know what we did," continued Mokov with relish. "It was quite simple. The gangway was up, and the door closed. Lieutenant Eransky, who was in charge of the squad, thought he saw a woman's dress hanging beside one of the windows. We want no women here—save one. So Lieutenant Eransky attended to the matter in his very efficient way. The men merely knocked the brakes in the wheel hubs loose, and rolled the ship off the plateau into the canyon. They saw it crash to the bottom half a mile below, a mass of wreckage, and then came back and reported. Whoever might have been in it is now dead."

Tulner cried out, and pitched forward on his face. Jimmie exploded into a string of wild curses. Darrell's face was grey and his face clammy with perspiration, as he held himself calm.

"Fool, am I?" he flung at the Russian. "You are the big fool, Moklov. That plane carried to her death the one and only woman you wanted here, Evelyn Tulner, looked up helpless inside!"

Out of his chair came the Russian with a leap that hurdled the table.

"You lie!" he screamed insanely, felling Darrell with a brutal blow. "Tell me you lie, before I stamp you to death!"

"I do not lie," repeated Darrell from the floor through bloody lips. "She directed us here and was waiting while we tried to free her father."

Again and again Moklov swung his heavy boot against his helpless prisoner, shrieking curses, then whirled on his cowering followers.

"Bring me Eransky! Bring the knout!"

Abruptly he ceased, straightened up and walked slowly back around the table, daintily wiping his brow with a silken handkerchief.

A crafty smile appeared on his lips.

"And that was all you came for?" he queried softly, as Darrell was jerked to his feet and held there despite his sagging knees.

"No," gasped Darrell.

"I thought not," observed the Russian suavely. He spoke a sharp command to one of his men. "I am ordering Eransky released. I wanted Miss Tulner, yes. One seeks what joy he can from Life, especially when Life is so limited. But after all, she was but a passing whim, a lighter motif in my existence. The Vibration is the all-compelling theme! Every one of us here is under sentence of death by the New Republic. Fifty Murderers, the world calls us. As "The Fifty Murderers of The World" we shall be known, if any are left alive to Chronicle us. Is it not so, Comrades?"

Wild cheers and laughter answered him. Moklov flushed with pride. He tore open his silk shirt at the neck and bared his hirsute chest. He gestured dramatically.

"Cheers, Comrades, cheers—a thousand of them—for the God of The Vibration! Vodka, Vodka, for every man!"

Hoarse shouts nearly deafened the prisoners, as the bearded men screamed and roared in the passion of the moment. Bottle after bottle of vodka appeared to be seized, emptied almost at a gulp and shattered against the walls.

The three prisoners were nearly forgotten. Darrell, still faint from the mauling under Moklov's booted feet, fought to throw off the lethargy that weighted him down. He decided that he was not seriously injured, for apparently no bones had been broken. Jimmie stared wide-eyed at the wild scene. Tulner leaned helplessly against the wall with eyes closed.

Louder and louder rose the shouting; faster and faster were the bottles emptied. Only Moklov seemed to hold himself in hand. Suddenly he raised his arm with a commanding shout.

"Hold, Comrades!"

In the pause that followed, while the noise was quieting down, Darrell noted in surprise that all conversation was in English. Then he recalled a remark Evelyn had made, that Moklov once swore that neither he nor his men would ever again speak their mother tongue of the Steppes. The babble ceased. Drunken, insane men teetered unsteadily and peered through bloodshot eyes at their leader.

"Men of the new god, Vibration, that is going to wreak our vengeance on Russia and the whole world, you have craved a sacrifice of the chute. I would not give you the old man. Now he has brought two more to accompany him. These three sacrifices—blood for The Vibration—I now give you!"

A mighty shout burst from fifty throats. The men swarmed toward their victims. Moklov waved them back imperiously.

"And I shall act as high priest on the platform," he concluded. "Come!"

Out of the room they piled, dragging and butting their trio of prisoners along with them, into the open courtyard where a gas-driven electric generator whined in one corner, a stairs led down to a dungeon close by, and where a litter of packing boxes filled most of the available space.

The sharp morning air revived Darrel somewhat. He looked up at the rosy sky outlining the peaks. Daybreak was at hand. By now Evelyn—how much a part of his life she had suddenly become—should be taking off the plateau and getting in touch with Radroth to send the bombers. But now! There flashed before his mind the vision of the wrecked ship in the canyon bottom. He dropped his head on his chest unmindful of the jeers and curses heaped upon him by the frenzied men.

They arrived at the hoist. Moklov stepped up on it, and ordered the three captives placed beside him.

"More blood, more bourgeosie blood, for The Vibration, Comrades!" he shouted, as the hoist started upward toward the platform. Frenzied, savage cheering and yelling drowned his words.

Darrell's mind was dead. What was the use? Evelyn gone, the plane smashed, sure death awaiting the three of them, whether on the chute above, or at the hands of the raving mob on the ground. Yet there were the peoples of the world. The tiny thought made itself

felt. He worked his hands mechanically and marvelled stupidly that they were loose inside the hastily tied bonds that held them. He glanced at the apathetic face of Tulner beside him. Death would be no unwelcome visitor for him. Then Jimmie's face, tense, white, and staring with all of youth's horror of death on the approaching platform. The people of the earth—— With a mighty effort Darrell cast off the lethargy that gripped him.

The hoist halted at the platform. Moklov stepped off and jerked Tulner and Jimmie off the hoist, then turned with a sneer to Darrell, and stopped in abrupt amazement. Darrell was launching a terrific blow at him. Moklov had no time to duck. It landed on his jaw. Down he went like a polled ox. Darrell stumbled on the edge of the platform and regained his feet, as Moklov came up with a mighty roar and charged him.

But Moklov, the terror of Moscow and of Petrograd before the enraged Russian people had changed the name back to St. Petersburg, Moklov, the victor over two husky American policemen, had met a fighter.

The shorter American slid out of his clutching arms so agilely that Moklov barely escaped plunging off the platform down upon the heads of his milling men below, shouting and trying frantically to climb the smooth supports of the platform.

Moklov turned. Darrell caught him with a swift left hook to the jaw that sent him sprawling. As he came up a hard right to the other side of the jaw thudded him back to the platform. Moklov had met his master. He remained crouching with his hand behind him. Suddenly the hand flashed into view, clutching a big electro-pistol. Darrell leaped on him like a wildcat, kicking madly with both feet. The pistol flew into the air and struck the platform near the base of the chute. Everyone ducked instinctively as it exploded with a cannon-like report, its bolt of lightning shooting hundreds of yards into the air.

"Get up!" Darrell's words were grim and menacing. "Get up, or I'll kill you, you rat!"

The Russian came slowly to his feet. There was a hunted look in his eyes and the desperate courage of a cornered rat. He plunged for the pistol. Darrell had only time to kick it off the platform in among the men below. He whirled and struck at Moklov, who screamed in terror and tried to throw himself back out of reach. The blow connected. The Russian went down again. As he struggled to his feet Darrell closed in and beat a tattoo with both fists over the heart. Moklov was driven to his knees, but managed to stand up again, wobbly and fear-ridden, when Darrell backed off, and pointed to the trough.

"You wanted a sacrifice to your hellish god, The Vibration. Get into that chute!" he snarled.

Moklov gave it one glance then turned and climbed into the chute, grinning triumphantly.

"You're right, American fool! I would never have thought of it. Halfway down the trough I'll go, then climb out and drop to the ground. Then back at you—and you weaponless up here! Ha!"

Darrell leaped for him. Moklov tried to step carefully on the polished steel. His foot slipped. He struck in the chute on his back and slid over the edge of the wall. Down, down! His clutching fingers seized the edge of the trough, halted his progress. He sat up, clinging firmly to the edge, and turned to jeer at Darrell crouching on the platform.

"You——"

The word ended in a scream of fear. The electric timer had clicked. A big, iron jovianite bomb had started to roll down the chute. Moklov tried to throw himself out of the trough. His fingers lost their precarious hold. Down the chute he sped ten feet ahead of the rumbling, rolling bomb. Out of the end he shot for the last long drop to the canyon bottom half a mile below. His terrified screaming came faintly back to the tense, swaying listeners inside the monastery. Then the ground shook and rolled under The Vibration. As it subsided there came up out of the canyon the crashing thunder of the bomb's explosion. Moklov's god of destruction had claimed him.

Darrell turned shakily to Jimmie and the professor, who had been thrown face down by The Vibration. He tore the bonds from their wrists.

"Make a run for it!" he ordered with his old-time terseness. "Hurry! They're climbing the frame work."

"How about you?" demanded Jimmie.

"I'm staying here. I'll blow this dump off the face of the mountain and put an end to this Vibration forever. Hurry!"

"I'm staying right here! I'll stand 'em off while you blow her up! But wait till Tulner gets over the wall and away."

Tulner sat down resignedly.

"I won't move an inch without you both," he said weakly. "I've lived death over so many times in horror of this thing, that what you do will be a genuine pleasure."

They were near the center of the platform to avoid being picked off by men with pistols in the crowd. One man had nearly reached the platform edge. They could hear his fellows urging him on with shouts. Darrell caught up a short crowbar, the only tool on the platform, faced the end bomb and raised the bar above his head for the final blow.

A woman's scream froze his arms in midair. He whirled around. The shattering crash of an electro-pistol broke on their ears. The man who had nearly reached the platform fell, stabbed through and through by the searing lightning bolt. All eyes were riveted on the roof of the living quarters. A slender, golden-haired girl stood there, covering the crowd below with a big electro-pistol in either hand.

"Evelyn!" gasped Jimmie.

Darrell's eyes went suddenly dim, and he caught his breath at the wild thrill in his heart. What a girl!

"Hands up! Face the other wall with your backs to me! Move!"

A double crashing roar punctuated her shrill orders. Two laggards whose sneaking hands reached for weapons were hurled lifeless to the ground. The rest leaped to obey.

Darrell sprang for the wall, carrying Tulner. Along its narrow top they picked their way, he and Jimmie, until they were able to leap down upon the roof and run to Evelyn, who stood at the edge grimly dominating the men below. Darrell caught one of the pistols from her hand.

"No," he whispered. "Help Jimmie with your father over the hill back there. When you reach the hilltop give a call, and I'll join you. From there you can cover my retreat."

An age passed before Jimmie's shout informed him that they were safe. Darrell sprang across the roof

like a deer, let himself over the wall and dropped to the ground. Three minutes later he threw himself down among the others.

"Down the hill with you!" he gasped. "Hide under boulders if you get the chance after the explosion! Here goes! They are already on the roof!"

He aimed carefully at the line of bombs on the chute, pressed the trigger and rolled backward down the hill.

A great blast of flame—ten thousand thunders—hill shaking like jelly—falling rocks and debris from the sky—yellow clouds of gas nearly obscuring the sun—rock and dust still falling—everyone coughing and trying to make themselves understood by the others—everyone temporarily deaf.

Darrell crawled to the crest of hill and looked over. A giant's hand—Jove's hand, indeed—had scooped out a great hollow in the mountain-side. Nothing was left. Monastery, chute, men and all had vanished.

The rest joined him, excepting Jimmie.

"Our last gesture," commented Darrell sombrely. "I don't know how we'll ever get back to civilization. No food, plane gone, hundreds of miles of impassable marshes. . . . Where has Jimmie gone?"

"To one side, please," announced that grinning young man pertly. "Your turn will come."

He swung an unwieldy black box from under his arm, opened the shutter and switched on the motor. "I had this cached near the top of the cleft," he explained as he tested it. "By the way, I'll insist on splitting the proceeds four ways. Hello . . . Hello Manila. . . . Yes. . . . relay this please to the World Television, New York City. Inform them that this is the million dollar scoop I spoke to their Washington office about. . . . Oh, all right. . . . Hello, World Television. This is Jimmie Herbert, George Darrell's secretary. . . . yes, Commodore Darrell. I'm holding you to that million dollar contract. The Vibration is ended——"

"——ell it is," broke in the World Television voice. "It just finished shaking down our building."

"It will continue to shake for some time, but will gradually subside," explained Jimmie hastily. "But first send a plane to the San Shan Mountains in Siberia and rescue the three of us. We haven't anything to eat or drink. Hurry!"

"By the way, Evelyn," remarked Darrell as they strolled away from the busy Jimmie and her father. "How did it happen you escaped being killed? Moklov was certain that whoever was in the plane must have perished, when it was pushed over the edge of the plateau."

She laughed musically.

"I wasn't in it. I thought something like that might happen, so I left the plane, shut it up and came over the hillside here to wait for you. At dawn I was up on the crest of the hill, after waiting all night at the entrance to the cleft to be sure you wouldn't pass me in the dark. The shouting and yelling inside the building frightened me. Then I saw you fighting Moklov on the platform, and I ran to the wall and climbed up to the roof to help you out. That is all there was to it."

"Absolutely marvellous!" murmured Darrell in awe. "I have never known anyone else in the world who can be so certain of doing the right thing at the right time, as you have done all the way through."

She glanced shyly up at him, then instinctively raised her lips to his.

THE END

In the Realm of Books

"Tarzan Triumphant," by Edgar Rice Burroughs. Published by Edgar Rice Burroughs, Inc., Tarzana, California. 318 pages. $2.00.

THIS is the fifteenth volume of the world famous Tarzan series and will undoubtedly be acclaimed with shouts of approval by the Tarzan fans, whose numbers are uncountable. It is perhaps the best written book of the whole series and has the added advantage of being more plausible than most of them.

We meet a great many new heroes and heroines in this new book: The descendants of a mentally defective and epileptic Greek who as a follower of Apostle Paulus became a Christian and taking a blond slave girl with him fled into the interior of Africa. The mental as well as the physical deficiency survived also the healthy virility of the blond slave girl.. The males of this peculiar tribe were all epileptics, cursed with super-noses and receding chins, the females were occasionally very pretty replicas of their forgotten ancestress. Their religion was a fearsome mixture of bigotry, hypocrisy accounting for the Christian part, *plus* barbaric Judaism on the Hebraic side.

Their territory is Median and Lady Barbara Collis bailing out of a stalling plane is first acclaimed a messenger from Jahwe (Jehova) later on condemned to drowning in the lake. Before that she has made friends with one Jezebel, one of the beautiful blondes of the tribe. They are rescued in the nick of time by one Smith, an amateur geologist, who is exploring Africa accompanied by Danny Patrick a professional machine gunner from Chicago, whence he fled to side-step the usual penalty for double-crossing his gangster boss.

By the way, this character of Danny "Gunner" Patrick is one of the best ones ever created by Mr. Burroughs.

His picturesque language and his reactions to Africa are most amusing.

Then of course we have the bad Bolshevist, Stabuch, an emissary of red Russia, who is commissioned to avenge Lveri, whose expedition Tarzan wrecked in a previous book, who has joined forces with one Caprieto, an Italian communist, who has built up quite a trade in "black ivory."

There are captures and rescues, recaptures and re-rescues, mostly effected by Tarzan, whose almost omnipotent figure weaves in and out of the various scenes and situations as master of it all, invincible, and unconquerable everywhere, running absolutely true to the established form, so that there will be no disappointment to the Tarzan addicts.

Two rather agreeable love stories are developed as the book progresses, with the usual happy ending. Mr. Burroughs is probably the only author who does his own publishing, and makes money at it, and it is of course creditable to keep all the profits in the family, but I think he overstepped his limit, by having a member of his clan do the illustrations. They are awful.—C. A. B.

"The Gap in the Curtain," by John Buchan. Published by Houghton Miffin Co., 381 Fourth Avenue, New York. $2.50, 313 pages.

Only by stretching our good will close to the breaking point, can this book be classed as scientific fiction. The advance press notices stated that the theme of the book was a scientist who working on a new theory of time shows, for one second, the "London Times" of June 10th of the following year, to a group of guests.

"Time" as a theme is in all probability one of the most difficult ones, a writer can choose. It takes a master of science fiction, a profound knowledge of any number of sciences, and a magnificent imagination to make a time story plausible and convincing. Science fiction writers have used all kinds of methods to transport their characters into

the future. "Time Machines" *à la* Wells, the 4th dimension, etc., etc., have proven satisfactorily plausible to a multitude of readers, but Mr. Buchan uses a drug, neither described, explained, nor specified, combined with a sort of weakening diet, to make his characters see for one short second what they believe is a copy of the "London Times" of the next year, the year to come.

Mr. Buchan needs 74 pages to lead up to this and now the question arises, how many words can anyone read and absorb in one second? This is barely enough time to get a proper focus on a printed item, but anyhow one of the characters thinks he has read something about a combination of mines, and for fifty pages we follow the efforts of this man to obtain a controlling interest. Another character, a politician, thinks he has seen a new political development and it takes thirty-six pages for this.

The third man thinks he has seen his name as participant in an archeological expedition which consumes thirty-eight pages. Two other fellows think that they have seen their death notices, one turns out a mistake. They buried an old forgotten namesake using thirty pages and the episode of the one who really dies takes up forty-eight pages.

The cover jacket contains the statement that Mr. Buchan writes for his amusement. His writings may amuse him, but the reading of this particular book did not amuse the reviewer at all, in fact it bored him so that he gladly joined three beginners in bridge. He seldom has read anything duller and more uninteresting than this book. He has no fault to find with Mr. Buchan's style or his ability to present things in continuity, and the number of books, which he has written, indicate that he is a writer, but he cannot write scientific fiction.

—C. A. B.

An Amusing Invisibility Story From Germany

"Hansgeorg erbt ein Wunder," by Walter F. Bochow. Published by the Ernst Oldenburg Verlag Leipzig, Germany. Mark 4.50. 255 pages.

A German ex-army officer Hansgeorg von Burzk, whose baggage consists of a few rather shabby suits and a number of bricks, giving confidence-inspiring weight to his trunks, is very much downhearted. His cash has shrunk to a few paltry marks and he is contemplating the raising of a few additional marks by pawning his tennis outfit, when he is considerably annoyed by the opening and closing of his door. Again the door opens and exasperated he throws one of his confidence bricks into the open door frame. Much to his surprise it bounces back in midair and something invisible sinks with a very human groan of pain into one of his chairs. Suddenly in the chair materializes the form of a dignified old gentleman clad incongruously in a very wide overall-like garment. He apparently has been injured by the hastily thrown brick, but, waving aside Hansegeorg's sincerely tendered apologies, informs him that his last hour is fast approaching anyway, and that he wants to present Hansgeorg with the suit of invisibility, representing his life's work, if Hansgeorg will swear that he will use the suit only for the benefit of humanity. Being an ex-German officer, equivalent to being a gentleman, Hansgeorg swears to that condition and receives the suit, instructions, documents how to make it, and an envelope containing 1200 marks in cash. Hansgeorg then assists the inventor into another room, summons a doctor, who arrives too late and can only sign the death certificate.

Hansgeorg experiments with the invisibility suit, which works to perfection and then sets out on a shopping tour. For dinner he repairs to one of the small wine restaurants for which Germany has always been famous, the owner of which is Hansgeorg's old top-sergeant. Through him Hansgeorg is introduced to Renate, the only other guest in the small restaurant, and who is waiting for her father, a well-to-do doctor. Renate is troubled and Hansgeorg having a charming personality soon learns that her father is being bled by a professional blackmailer, and learning all the necessary details promises Renate to place the incriminating documents in her hands on the following day. Now follows a very amusing episode, how Hansgeorg, invisible of course, invades the blackmailer's office, appropriates a number of documents and administers a very sound thrashing to the blackmailer.

Renate is very happy and a mutual love comes into being.

A few days later the invisibility suit is stolen and the entire banking world in Berlin is upset by unexplainable thefts of large amounts of cash.

Hansgeorg finally locates the thief, who is a sort of Robin Hood, and who is depicted as a very lovable scoundrel. To Hansgeorg this thief is Mr. Alias, on account of his many passports, and he is of great help to Hansgeorg in getting a careless young friend of his out of the clutches of some dangerous crooks. One amusing episode follows another in breathless haste, and when Renate and Hansgeorg finally celebrate their engagement, one sees with regret that the book is ending.

Though not particularly strong on science, the book is nevertheless amusing and entertaining enough to while away a few idle hours.

—C. A. Brandt.

"The Woman Who Couldn't Die," by Arthur Stringer. $2.00.

A fantastic adventure story of a very high order, very convincingly told. It starts at the time when Odin and Thor were the ruling gods in northern Europe when the vikings and their dragonships were the terror of sea and coast, when beautiful women were far and few between so that their beauty became a saga and excited the lust of the sea rover.

There happened to be Blodoxe, one of these terror spreading vikings, who having heard about the beauty of Thera, princess of Hordoland, kidnaped her and fearing pursuit from the Hordoland warriors carried her off across the Atlantic. They must have wandered well nigh across the North American continent and finally found a doubtful haven of rest with a tribe of savage Eskimos or Indians. The chief of the tribe desires Thera for himself, but she having fallen in love with Blodoxe refuses, and insults the chief. The chief then gives his consent for the marriage of Thera and Blodoxe. Thera is taken to their temple and then encased in a block of clear ice and as such presented to Blodoxe who promptly goes berserk and pretty near exterminates the tribe singlehanded, but gets killed finally.

The story then switches into our time and in Quebec we meet a Doctor Pareso, who has achieved a great deal in suspended animation and other branches of medical science. He has a clew for the location of a mysterious tribe of white Indians, reputed to have enormous quantites of gold, and said to be ruled by a beautiful white queen. The accidental discovery of an old manuscript and a map giving the exact location of their tribe spurs the doctor to ever greater efforts and finally the expedition is under way. The hero who tells the story, Dr. Pareso and a gigantic blond Norwegian finally reach the mountain locked valley of the white Indians. They have any number of adventures before they get there. By playing upon the superstition of the Indians they are accepted as minor gods and finally succeed in seeing their supreme god and ruler—a beautiful white woman encased in a block of clear ice. It is Thera, the bride of Blodoxe, who has lain asleep in the ice for over a thousand years. The doctor claims her for his own. His proposal to bring their god back to life is finally accepted and the giant Norwegian as well as the hero are almost killed by the prolonged blood transfusions.

But Thera comes back to life, and first falls in love with the hero, then with the Norwegian, the hero's affections having been captured by a comely Indian maid. The five decide to leave the valley and the Indian maiden is instrumental in discovering a way out.

Loaded down with gold they have about reached the pass, when they are assailed by the entire tribe. By setting fire to a natural reservoir filled with seeped crude oil they almost wipe out the Indians, but a handful remain who kill the doctor. Thera and her Norwegian lover jump off a precipice rather than surrender, but the hero and his Indian maiden reach the pass and get back to civilization.

A very interesting yarn, plausibly and well told. Lovers of fantastic adventures will enjoy this book thoroughly.

—C. A. Brandt.

"Imagine a Moon in a Box and Other Stories," by H. R. Wakefield. Published by D. Appleton & Company, 35 West 32nd Street, New York.

The book contains thirteen short stories which are all quite enjoyable. Only one of them could be classed as belonging to the scientific fiction group, which is the first one, which also furnishes the title for the book. The story deals with the immensely wealthy Lord Balcombe, who in 1950 tries to prove a statement concerning gravity made by a mathematician in 1929. His idea is to send a box-like affair way out beyond the gravitational influences of the earth and there have his assistant perform some simple task. For the lifting of the box he employs his "L" ray, and his assistant is a disreputable fellow whom he has kept under alcohol for several years. The experiment succeeds, and the only one who is dissatisfied is the alcoholic assistant, who returns from his jaunt into space, hopping mad on account of a missing corkscrew, so he could not drink the beer.

As a satire on scientific fiction the story is barely possible, of course one could not take it seriously.

By far the most enjoyable story in the book is the one called "Swimcase" an excellent parody on that sort of hero-worship which manifests itself in New York, whenever someone has swum the channel or with a lot of luck negotiated a dangerous flight or has done some other stunt.—C. A. Brandt.

DISCUSSIONS

In this department we shall discuss, every month, topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

CRITICISM OF "THE DOUBT" AND SOMETHING ABOUT MR. CAMPBELL'S STORIES

Editor, AMAZING STORIES:

I have been a reader of AMAZING STORIES for about two years. During this time I have had the opportunity of reading many fine stories—such fine stories that they keep me awake until two, three and sometimes four o'clock in the morning reading them.

I have one or two brickbats to throw. Do you really think that there was any science or science fiction in "The Doubt"?

Next: I think that Mr. J. W. Campbell's stories are a bit too far fetched and dry reading. Take for instance his latest story the "Last Evolution," the machines did *too much* of the work. I do not deny that man may reach a stage such as Mr. Campbell pictures for us, but in order to have a story really exciting and interesting one must have some obstacles in the path of the hero, whether he be man or machine.

I should like to say a few words in regard to time travel, now that my brick bats are thrown.

From what I gather from the works of such men as Eddington, Jeans, Slossen and Bertrand Russell—time-travel would be possible in a limited sense if one could exceed the speed of light, or travel at the speed of light.

A man could be shot off into space at 180,000 m.p.s. and travel to a distant part of the universe and return to earth say five minutes later (his time) but according to an observer on the earth the man has been gone one hundred days. The man may then shoot off into space again at a speed of say—200,000 m.p.s., stop after travelling a few minutes and wait awhile, then look towards the earth through a telescope and see himself leaving the earth. He is looking into the past, but he is helpless, he cannot change it! That which is present to him is past to a normal earthling because light travels at a speed of 186,000 (approximate) m.p.s.

As for these illustrations being possible, *present day science* says "No," because as a physical body increases its speed, its mass also increases and its length decreases. At the speed of light its length would be zero and as we know of nothing that has a negative length or zero length—it is impossible for a physical body to exceed the speed of light. Thus the above illustrations of time travel are impossible.

I would like to hear from some of my fellow AMAZING STORIES readers as to whether I have read correctly or not.

George P. Kirkpatrick,
River Road,
Piermont, N. Y.

("The Doubt" is a very curious study of abnormal psychology, outside of the vivid description of an air combat. You must remember that every time an airplane leaves the ground it presents a wonderful achievement in science and that science also has extended itself, very unfortunately, in the production of deadly weapons. A combat in the air is full of natural science. In a certain sense, every time one looks at a celestial object he is having a direct view of the past. That does not indicate any possibility of transporting himself thereto.—EDITOR.)

DR. SMITH AND MISS ROBB AND SOME CRITICISMS OF MR. CAMPBELL'S WORK

Editor, AMAZING STORIES:

I have seen the joustings and was pleased indeed to see that noble warrior, Dr. Smith, nimbly run his fingers over the keyboard, and then bow to a wildly cheering audience, as a beam of fourth order rays neatly lowered a muffler upon a frantic Miss Robb. Congrats Doc! Let's have regular people in your stories and let the Englishmen read the work of their countrymen if they are particular.

Now we shall turn to a certain Mr. Campbell, whom we frequently find ourselves comparing with Dr. Smith. Perhaps it is because his work resembles Smith's. With this in mind, I shall point out what seems to me to be similarities between "Invaders from the Infinite" and the "Skylark" stories.

Campbell used the same plot as in "Skylark Three" in his story. He drives his ships with metal bars. (Incidentally he calls it molecular motion, and this hypothesis of his contradicts Newton's well-known law for action and reaction.) He tried his best to use greater speed and more power than the "Skylarks." His "lux" and "relux" are too much like "Arenak" and "faidon," and his crushing tactics, used in subduing the enemy, were first used, in effect, in the last battle of "Skylark Three" (What a fight!).

The Skylarkers put up a zone of force which was impenetrable and our hero, Seaton, said it was like jumping down a hole and pulling the hole in after you.

Now Mr. Campbell, didn't your heroes go into a sort of artificial space and use the same descriptive expression, when they were in danger?

Mr. Campbell: "Every star represents a collapsing energy-field! Five hundred thousand million stars, five hundred thousand million power plants, every one of them destroying, on the average, one thousand million tons of matter each four minutes, two hundred and fifty million tons a minute. That's a grand total of one hundred and twenty-five thousand, thousand, million. . . ."

There, there, Mr. Campbell, that will be all right! Your stuff is great except for those awful numbers. I would like to suggest that you use the "zillion," or the "scintillion," as most people can't really comprehend the number fifty; what do you say? Campbell: "All X."

Whereupon Mr. Campbell seems to vanish in thin air remarking, "Just my little joke, folks, you see I'm not Campbell at all. I am only an "artificial matter" image of him, heh, heh."

It is interesting to note that the hero in "The Light from Infinity" covered more ground in his little sprint in the superworld than the Skylark third could travel in a million years, at utmost acceleration. I wonder why Mr. Eshback thinks the same physical laws, which we are accustomed to here, also apply in the super-world? Let's have our heroes visit an electron in a current-bearing wire, Mr. Eshbach, and use your imagination next time.

Charles Schneeman,
1461 E. 63rd Street,
Brooklyn, New York.

(We think the controversy between Miss Robb and Dr. Smith has been so good natured on both sides that it has made quite delightful reading. Perhaps from the editorial standpoint the best criticism that can be made on Mr. Campbell is that his stories have been popular with our readers. Of course such stories as his and Dr. Smith's are in the realm of the impossible and that will cover a multitude of "sins" if we may so term it. Both are extremely popular authors; and we of course want to please our readers.—EDITOR.)

THE TEMPERATURE OF OUTER SPACE

Editor, AMAZING STORIES:

I wish to take exception to your opinion, given in the "Discussion" column in your October issue that "any living body out in space would freeze to death in short order."

There being no appreciable matter surrounding it, no loss of heat would take place through conduction. The loss through radiation would be offset by the heat received through radiation from the sun, and the temperature of the body would soon become constant at a value dependent upon its distance from the sun.

At a position in, or near, the orbit of the earth, this value would be only slightly lower than the mean temperature of the earth, *i.e.*, about 70° F. I say "slightly lower" because the earth has a relatively small amount of internal heat which raises its mean temperature *slightly* above that which would otherwise prevail.

Now, if this "body" of which we speak were a space ship of any description, generating heat through combustion (no 100% efficient engine has ever been built), then it would have a surplus of heat to dispose of, and its temperature would rise above that normal point of balance. Therefore, it is *my* opinion that the navigator of a "space rocket" *would be in serious danger of being roasted, rather than freezing to death.* Remember, there would be no cooling breeze to conduct the heat away, as there is in atmospheric travel.

While I am at it, I'd like to call your attention to one phase of hypothetical space travel which is very commonly confused by authors. I refer to the subject of weight, or apparent weight.

Once outside of the atmosphere, the rockets (or other motive power) of a "space ship" would have only one or both of two things to do, namely, to oppose the gravitational force of a nearby planet, and accelerate (or decelerate) the ship. In either or both cases, a moment's thought convinces us that the apparent weight of bodies and objects inside the ship would be proportional to and entirely dependent upon the propulsive efforts of the rockets. If, and only if, the rockets were turned off, the passenger would be left without any apparent weight (*not mass*). *This would be true regardless of their location in space,* so long as they were outside the atmosphere.

As an example of this error, we find in "The Swordsman of Sarvon" that Professor di Bargi is slowly decelerating the ship, but Benny Jacobs is still chasing flouting drops of hot solder. And Charles Cloukey is generally more accurate in such details than the average writers.

I enjoy "Science Fiction" stories as they come to us, and have no objection to their presenting theories or statement contrary to accepted present day science, where such are necessary to the premise of the story. I do, however, get a pained expression when I come upon some incident as that mentioned above, where it is entirely unnecessary.

For instance, I do not believe that the actinic rays upon Venus would be at all dangerous, but such is necessary to the above mentioned story, therefore I add a tiny pinch of salt, and swallow it with pleasure.

I suggest that you should edit your stories carefully for errors of this sort, and thus add tremendously to the credibility, and consequently to the enjoyability of your magazine.

In general I find your authors stronger in chemistry than in physics and electricity (or is that because I know less about chemistry than the other subjects?). For instance, Mr. Binder, in "The First Martian", gives what seems to be an excellent and reasonable dissertation on isotopes, but falls down miserably when he comes to radio wave-lengths. He has a "world-renowned" amateur, in 1960, devising a receiver capable of operating on 20,000 meters. As a matter of fact, I built a receiver operating on that wave-length and over, some forty years previous to 1960. (And thousands of other boys did the same.) I refer Mr. Binder to Mr. Melborn's story "Infra-Calorescence."

In conclusion, my idea is to make 'em more accurate if you can, but if you can't, print 'em as they are, they're good reading.

L. M. Swift,
Electrical Research Products, Inc.,
1515 Milam Bldg.,
San Antonio, Texas.

(Those who attempt to break the record for height with airplanes suffer greatly from the intense cold, unless they are protected by most elaborate wrappings. It was but a few days ago that the account was published of a record-breaking ascent in a plane and the temperature at a height of a few miles only was nearly 70 degrees below zero Fahrenheit. There is no doubt if the plane would have been driven up into outer space, that the temperature would have been far lower. "They say the proof of the pudding is in the eating." If you will excuse a bad pun we may say that the procedure in question also gives proof of the heating or lack of heating. Your theory would intimate that after a traveler into space reached the temperature far below zero the temperature would then begin to rise. At least that is the best that can be made out of your theory. As far as rockets are concerned this course would be the only conceivable appliances for propelling a body in the vacuum out of space, the apparent weight of bodies in a space ship would not be affected by them, except when they accelerated or decelerated the ship, but as long as they went at uniform speed it would be without effect on the crew and in any case the effect would be in the opposite direction of the propulsion effected by the rockets if they accelerated or decelerated the ship and to a certain extent would certainly be comparable to gravity. But as far as the simple propulsive effect of the rockets is concerned if they kept the ship going at uniform velocity there would be no effect produced upon the passengers who might float around regardless of everything. You seem to confuse the propulsive effects of the rockets pure and simple with the accelerating or decelerating effects of the same. You will see that the effects comparable to gravitation would be due either to acceleration or deceleration not to simple propulsion. The planet, Venus is nearly one-third nearer the sun than is the earth; that might be taken as giving more danger from actinic rays.—EDITOR.)

A NOTE ON TWO STORIES IN THE SEPTEMBER ISSUE OF AMAZING STORIES

Editor, AMAZING STORIES:

I just finished the September issue of A. S. and enjoyed all the stories with the omission of "Lady of the Light". I thought "Suicide Durkee's Last Ride" exceptionally good.

For all boys between 10 and 16 interested in clubs I have a proposition which I believe will interest them.

For particulars write to Wm. Bradley, Esq., of 1780 W. 21st St., Los Angeles, Calif.

Bob Mienema (Treas.),
1780 W. 21st St.,
Los Angeles, Calif.

(Mr. Williamson, the author of the "Lady of Light" is a very highly esteemed author. We found N. R. Jones' automobile racing story quite exciting and are glad you enjoyed it. You will probably hear from some correspondents about your club.—EDITOR.)

SUGGESTIONS FOR CONTESTS AND A SPECIAL FEATURE

Editor, AMAZING STORIES:

My interest in AMAZING STORIES as a continued, living entity, rather than a mere periodical has lately been rejuvenated by the "Discussions" columns, especially by the repeated reference to "The Moon Pool" and the "Skylark" stories. Having read the magazine haphazardly several years ago, I was not definitely sure whether I had read these eminent examples of science fiction or not. During the past two weeks I have been visiting second hand stores in Portland, and I have completed a set of the years 29, 30, and 31, and also the issues containing the two said stories, (May-July '27 and Aug.-Oct. '28) I expect to fill in the other months until I have a complete set from the beginning of the magazine.

I have some suggestions and some questions, as befitting a contributor to this column:

1. Have a voting contest open to all readers, to determine the ten best-liked stories since the inception of the mag., and also the ten consistently best authors. You probably have a good idea as to the result, but still there has never been a scientific determination of their ranking. The geographical results would also be interesting.

2. Another contest such as in 1927, which resulted in several good stories. Place other limitations on it beyond the mere restriction of the cover picture, and being hampered in certain lines. Then the originality of the writers would burst forth even more strongly along the lines left open.

3. Establish a regular feature by the editorial staff, giving a review of the advance of the world along scientific lines, as specifically forecast by stories in the magazine theretofor. It would not be necessary to wait for confirmation. For instance, yesterday a newspaper carried a report by a German scientist that a method of fixing the sex of a coming child, by treatment with lactic acid, or bicarbonate of soda, had been discovered. Frequently, letter-writers mention other examples. It is apparent that the majority of readers read the magazine because it is supposed to contain stories of the future, which may become fact, regardless of whether they read for entertainment or education. This theory underlies it in either case. Such a department, giving the fact, the story hinting at its discovery, date and author, would be a continual justification and proof of the theory of AMAZING STORIES. It would also be an education in itself, keeping us up to date with the world, by showing how the world is keeping up with the magazine.

4. This may not be tactful, and probably will not be answered, but I should like to ask what the cause of the change of editors of the magazine a year or two ago was, and how complete a change took place?

I expect to subscribe shortly, as the depression is ending for me, gradually but definitely.

John A. Leiter,
333 United States Bank Bldg.,
Portland, Oregon.

(In the early years of this magazine voting contests were conducted, but the upshot was that the returns were not satisfactory in number of voters. The voting contest did not seem to interest our readers. The one you suggest in your first description would certainly give interesting results if more than fifty or one hundred people would take the trouble to enter it. It involves some labor to produce the ballot. We have on hand more stories than we really require and do not feel like asking directly for more. We have certain authors whom we consider so good and who are so much liked by our readers, that we welcome stories by them, but that does not prevent us from being what is called by magazine editors "overstocked". It would not be easy to carry out your third suggestion. In many of these alleged advances description of which appear only in the daily papers are entirely fictitious. There has been virtually no change of Editors in the magazine with the exception of three or four months interval, until the present day, when Miss Miriam Bourne has left us. It is pleasant to read of the depression ending for one of our readers, so your last sentence is quite cheering.—EDITOR.)

VOTES ON STORIES AND IMPROVEMENTS IN AMAZING STORIES

Editor, AMAZING STORIES:

I wish to make a few comments on the past few issues of AMAZING STORIES.

The June issue: 1. Cover—fair. 2. "Masters of the Earth"—fair. 3. "The Lemurian Documents" are very good so far. 4. "A Matter of Nerves"—good. 5. "The Metal Doom"—excellent. I like the works of David Keller very much. 6. "Politics"—Swell. Murray Leinster is also very good.

The July issue: 1. The Cover—I must compliment Morey on this swell cover. It is the best I have ever seen on AMAZING STORIES. Keep up the good work Morey. 2. "Thia of the Drylands" is excellent. Harl Vincent is very good. 3. "North of the Matto Grosso" adds a different zest to the magazine. "Lemurian Documents—"Sacred Coat of Feathers"—very good. 5. "Resistent Ray" just another story. 6. "Sheridan Becomes Ambassador"—Excellent. 7. "Omega"—Very good to end up with.

The August issue: 1. Cover—Excellent. 2. "Swordsman of Savron"—off to a good start. 3. "Last Evolution"—Good. 4. "Beyond the Planetoids"—good interplanetary story. 5. "Room for Super-Race"—O. K. 6. "The Purple Monsters"—very good and unusual.

AMAZING STORIES is improving every month. The paper is good and the stories with the exception of a few are very good. Morey is improving. If he keeps up the good work he will beat Paul. I buy all the Science fiction magazines and a boy friend of mine subscribes to AMAZING STORIES. Please do not use fill-ins such as "The Doubt". There was no science in it. If you have too much room, devote it to the "Discussions Department." I would like to see more Science Fiction Movies. Why don't you draw up a petition for this, such as another magazine has done? This may prove effective. I hear that H. G. Wells' "The Invisible Man" is to be filmed. I did not see "By Rocket to the Moon", as it was not shown here. Well hats off to AMAZING STORIES!

Jack C. Day,
2423 N. 6th Street,
Harrisburg, Penna.

(A letter like yours is a comfort. As regards the story entitled "The Doubt" it impressed us as exceptionally good. There is enough of the technique of aviation and rifle practise to give it a good touch of science. We wonder if you have ever observed how short some of the great stories by O. Henry and Bierck are. One of our stories has already been purchased by one of the great Moving Picture Companies and we hope that more will meet the same fate. EDITOR.)

YOUR LETTER WITH ONLY ONE BRICKBAT BUT WITH SUNDRY ROSES

Editor, AMAZING STORIES:

My last letter to A. S. had quite a few brickbats. This time, however, I have some compliments (many more than last time).

I have one brickbat which I suppose I must sling, so here goes. The story "Invaders from the Infinite" by John W. Campbell, is not very good. It had wonderful possibilities but it was ruined. Mr. Campbell ruined it for the average reader by cramming it full of technical explanations and terms not easily understood by the layman. An accomplished scientist would have no trouble, but I am sure the average reader (like myself) would find it hard to follow the story. I believe the average reader with a limited knowledge of science would prefer simpler science. I do not mean that the stories should have no science whatever, by any means.

Now for the roses. In my last letter, I mentioned that the March issue was unusually good. Every subsequent number of A. S. has equalled or surpassed the March number. There have been some excellent stories such as "Thia of the Drylands," "The Swordsman of Sarvon," "The Purple Monsters," "North of Matto Grosso," "Beyond the Planetoids," "The Lemurian Documents," and very many others. There were no poor or mediocre stories except "Invaders from the Infinite." You are not cutting out the medical stories, but you are having only very good ones such as "A Matter of Nerves."

I must mention "The Swordsman of Sarvon" which has started with a great, mighty flourish. It seems to have a style similar to that of E. R. Burroughs, but it has much more science without text-book terms. It is much better than any of Mr. Burroughs stories, which I enjoy immensely.

Well, here's luck to AMAZING STORIES. May it keep up the good work.

Bill Bailey,
Aquabista,
St. Michaels,
Maryland.

(If we can judge by the criticisms of our readers, the stories you mention were all very good ones and we personally would confirm your selection. We have among our regular authors two quite eminent physicians, both of whom have the knack of short story writing, if we may be permitted to use the term "knack," for these really difficult literary efforts. The description of characters in "The Swordsman of Sarvon" was particularly good.—EDITOR.)

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UNFAVORABLE AND FAVORABLE COMMENTS ON OUR STORIES

Editor, AMAZING STORIES:

Things are very decidedly looking up. AMAZING STORIES is emerging from a depression of poor stories (and poor covers). For a good many months the really good stories were few and far between. The "Aristocrat of Science Fiction" was losing all right to that title. The covers were of the poorest kind.

But I picked up the August issue and saw a really fine cover. The first fine cover Morey had done since "The Stone from The Green Star." The picture there was as good as the best works of Paul, Wesso or McKay. I turned to the contents page and saw the name of Cloukey. That was something. Cloukey who wrote "Paradox" and "Synthetic". And that isn't all. There was John W. Campbell's finest story, "The Last Evolution."

Then the September issue. The cover is fair enough though not as good as last month's. But there is a new story in which Jack Williamson reveals some of the talent he showed in "The Metal Man".

I have been thinking of not renewing my subscription. In fact it was all settled. I would buy the magazine issue by issue, when it looked good and not when it didn't. But if you keep up this pace you may expect another $4 for another two years.

Although the stories have been poor I have not thought of loading the matter with reprints. And the letter from the young man who demands reprints amuses me. Of course the members of the Boys Science Club have not read the old classics. But, I am sure, that most of your readers have. Remember AMAZING STORIES is an adult magazine. Many of the old readers kept their favorite scientific yarns for future reading and now, because of these much-discussed times, must sell them.

The promised stories for next month look fine.

May you yet be "The Aristocrat of Science Fiction." I say that sincerely.

Dale Mullen,
611 West 5th,
Topeka, Kansas.

(If you will run through the "Discussions" you will find that stories in the issues you allude to, where you say that you do not like them, are enjoyed by other readers and of course you are only one against many thousands. We certainly agree with what you say about reprints. There are a few comparatively little known but very good stories, which we hope to give as reprints in the near future. We accept your criticisms and leave their contradictions to our readers and we shall hope to be the aristocrat you speak of.—EDITOR.)

ACTION OF A DOUBLE STAR AS THE CENTER OF A PLANETARY SYSTEM

As the question of Sirius which is a double star or in plain language two stars, acting as the center of a planetary system comes up in our stories, we are glad to publish the following letter from Professor Charles Lane Poor of Columbia University, who expresses very clearly how the double star would act.

My dear Dr. Sloane:

In reply to your letter of the 3rd, each planet would revolve about the common centre of gravity of it and Sirius. This provided that the members of the system are small and so far separated that they have but little mutual effect, as in the solar system.

In the case of large planets and near together they and Sirius would all revolve about the common centre of gravity of the whole system.

Chas. Lane Poor.

CRITICISMS FROM A FAITHFUL READER—SUGGESTIONS ABOUT REPRINTS AND ARTISTS AND THE DESIRE EXPRESSED FOR A RADIO PROGRAM

Editor, AMAZING STORIES:

As a subscriber, reader, and collector of AMAZING STORIES, I would like to express my views. In the first place what happened to the Quarterly? Do we only get two per year hereafter? Another thing, what happened to L. Taylor Hansen and A. Merritt? Your magazine undoubtedly is the "Aristocrat of Science Fiction." The others are either of poor quality or show signs of mass production. Well what about reprints? If so many readers want them, why not have them? As for the artists: keep Morey and Wesso and let's have a few from Mueller. Now for the stories. Here are the 5 best stories since Aug., 1930: 1. "The Prince of Liars." 2. "Tumithak of the Corridors." 3. "The Voice From the Ether." 4. "The Beautiful Bacillus." 5. "The Romance of Posi and Nega." "The Prince of Liars" was the best science fiction story I have ever read. In the quarterly, "The Extra-Galactic Invaders," "The Blue Barbarians" and "The Voice Across the Years," starred. I like the Discussions and the Editorials. And now comes the big question, what about a *radio program?* A little while ago I heard a radio program named "Rockets to the Moon," and at first I thought it was put on by a science fiction "mag," but horrors, it was a network presentation. If you would print this letter I would be much obliged. Cheerio.

R. Rose,
50 Hill Street,
Tonawanda, N. Y.

(We are greatly pleased at the pleasant things you say about us for we can assure you that no labor is spared to make our magazine a good one. While we are naturally too modest to entitle it the Aristocrat of Science Fiction it is very delightful to have such an expression from one of our readers. Your selection of stories is very good and we are glad to find Posi and Nega appreciated. We certainly enjoyed it and expect to have further adventures of these little beings. Exactly how the Quarterly will be treated in the future it is too early to say. If you could only see the quantity of original stories now in our files, every one of which has been passed by our critical copy readers, you would see why it is that we do not rely on reprints. Just at present we cannot take up the giving of a Radio Program.—EDITOR.)

AN INTERESTING DESCRIPTION OF AN EPISODE IN THE LIFE OF AN ADMIRER OF SCIENCE FICTION

Editor, AMAZING STORIES:

For a long time I was dumb to the existence of magazines that contained science fiction. I was interested in stories by Jules Verne and Edgar Rice Burroughs, but one day the cover of a magazine attracted me. But I devoured the entire issue in one evening and had to sit patiently and wait for the next issue. As you undoubtedly know there are two other stf. magazines on the newsstands and it was one of these I discovered, so I went to bookshops and bought quite a collection of back numbers. "AMAZING" interested me most, so I bought most of these and pride myself on a collection of 29 AMAZING STORIES. From March, 1930, up to the current September issue with only the May and September issues in 1930 missing to make a complete chain.

"AMAZING" is without a doubt the best stf. magazine out, and with the best authors. But why can't you get stories by Ray Cummings, H. G. Wells and others? This question is probably becoming tiresome to you as I realize it is hard to please everybody, but nevertheless if enough readers make this same plea, we might yet have stories by these authors.

At the present time I am still reading the back numbers of AMAZING STORIES and am just starting "The Drums of Tapajos," by Capt. S. P. Meek. But there is one story in your present issue that I have read and would like to praise to the ceiling. It is "The Romance of Posi and Nega." It is, as far as I can see, an entirely new theme handled capably by Joe W. Skidmore. More by him! Imagine the life story of one of the electrons or protons, that really had a long life. Nega lived such a short time there wasn't much to tell. Ouch! I better stop now and make room for the rest of the letters you have to wade through.

Carlton Steger,
152 W. 49th St.,
New York City.

(You certainly have developed a good basis for criticizing AMAZING STORIES and we appreciate all you say. The "Drums of Tapajos" Captain Meek was followed up by a sequel, "Troyana," which started in our February, 1932, issue of AMAZING STORIES. We know you will enjoy the whole set. Mr. Skidmore produced quite a charming bit of science fiction in the story of "The Romance of Posi and Nega." We shall hope to have more from the same pen.—EDITOR.)

ABOUT DR. SMITH AND MISS ROBB

Editor, AMAZING STORIES:

As a regular reader of this fine magazine, I think I am entitled to put in a little defense for Miss Robb. The good doctor has seemingly defended himself very ably, but the unfortunate lady from merrie England has not (as yet) replied to Dr. Smith's rather severely written letter.

Dr. Smith, I realize that you are not a second Dickens, but you must be a rather intelligent writer, otherwise, why the criticisms? Therefore, I expect you to take this minor criticism lightly. Everybody knows that the United States have their own form of English, and that England is a country of diversified dialects. But there is one form of English that is spoken all over our Empire and the United States. That form, my dear doctor, is Literary English. It is not stilted as friend Tickele suggests, but a smooth, understandable language, combining the sturdy, plain, Saxon with the beautiful French, the sonorous Italian with the heavy German. It is a wonderful language. Britons and Americans alike ought to be proud of this common heritage. But the latter are not. They are everlastingly trying to coin new, harsh phrases. It is a crime that you, Dr. Smith, are guilty of. You may come back with the retort "I only use slang when one of my characters speaks."—Lame, my dear chap, lame. A man with the brains that most of your characters must have would not use slang. All the arguments of Mr. Tickele to the effect that "I know famous men who use slang" does not alter the truth of my statement one bit. The Honorable Alfred E. Smith (Coincidence my dear doctor?) uses abominable English. Yet because he is famous, is it to be said that he uses good English? Surely not. Therefore, Doctor Smith, I don't think it would take much effort on your part to use Literary English throughout your stories.

May I offer a criticism, Editor? While the recent fight for pure English has been going on, you have been tempted to insult the British people in your note at the end of the letters. To be definite: at the end of Mr. Trube's letter in the October issue, you said ". . . English slang we consider far less picturesque and interesting than American." Does that "we" stand for 123,000,000 Americans or 442,687,472 Britons? If you consider "Lousy" more picturesque than "Rotten" I must ask you to visit a place for those kind of people.

I suppose one gets the impression by my letter that I haven't much love for AMAZING STORIES. On the contrary. If I didn't like your magazine I wouldn't take the trouble to write to you. I think that you do your utmost to please your readers. The stories are for the most part superb. "The Swordsman of Sarvon" is about the best story I have read for a long time. Keep up the good work!

Jack Palmer Saunders,
80-37 89th Avenue,
Woodhaven, N. Y.

(Dr. Smith's story elicited any amount of admiration and very little criticism and we feel that he has established for himself an enviable reputation by this effort of his pen. Miss Robb's long letter in our November issue is so good-natured and yet so firm in its maintenance of the amiable writer's ideas, that we are sure that it will please Dr. Smith. We must remember that Miss Robb is Irish in origin, which undoubtedly affects her viewpoint. The "we" stands for the Editor of this magazine, only one of the 123 million Americans whom you allude to. Mere expression of taste is hardly a subject of criticism. You may not agree with "us" but the whole effort of the Editorial Staff of this magazine is to please its readers and to do so absolutely by giving them good literature and good science. —EDITOR.)

NOTE ON THE CLUB ORGANIZED BY MR. JAMES McCRAE. ABOUT WALKING THROUGH A WALL

Editor, AMAZING STORIES:

As this is the first time I have written to your mag. I hope it meets with your approval.

I think most all stf. mags are good but your's is above average. There have been some stories I did not like, but on the whole it is a good magazine. I have read every copy I could get, for the last four years.

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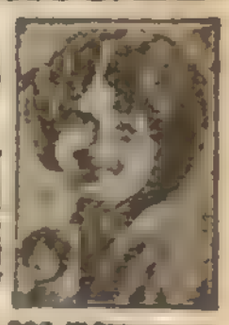

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"The Lady of Light" by Jack Williamson *MUST* have a sequel.

There is one thing I would like to ask about the "Swordsman of Sarvon" in the current issue. When the three spies became invisible and walked through the walls, what was to stop them from going through the floor?

As a member of the club organized by James McCrae, I wish to say the "club" is going fine. Anybody interested in joining, please send a stamped, self-addressed envelope to James McCrae, 4801 Longshore St., Philadelphia, Pa., and information will be sent.

L. F. MacNichol,
P. O. Box 53,
Langhorne, Pa.

(It has been the good fortune of the magazine to inspire some people with the idea of organizing Literary, Science and Correspondence clubs, at least we believe that we were the inspiration, and this letter touches upon one of these organizations. As far as walking through walls is concerned, we have to assume that the mysterious power is only applied to movements in a horizontal direction and not to vertical movements.—EDITOR.)

ABOUT THE EAST BAY SCIENTIFIC ASSOCIATION

Editor, AMAZING STORIES:

I want to thank you for publishing Jim Nicholson's letter in the August number of AMAZING STORIES. Through it I have met one of the pleasantest, most alertly intelligent boys and one of the most ardent science fictioneers I've ever come across. He has taken the Boys Scientification Club from the wreckage left by its former officers and now has the backing of the Board of Education of San Francisco.

I am one of those who believe that no proof of the existence of fate has yet been adduced which is weighty enough to merit serious consideration, but if there be such a factor in the lives of men, then certainly it is now in operation. The International Scientific Association as the Science Correspondence Club inspired the Boys Scientification Club; the new name of Junior Scientific Association was patterned after the present name of the senior organization; and the senior organization itself is in a position much like that of the junior. We of the Eastbay Scientific Association have been forced by circumstances to reorganize the ISA, and we invited Jim to our meeting last night. From now on we work together.

The Jr. SA publishes a bi-monthly paper, the METEOR, with a special midwinter edition. Dues are 35c a year.

The ISA is intended to be primarily an association of associations. It publishes a magazine, COSMOLOGY. Unless something happens to drastically change our plans, they will be as follows:

Single member $3.00
Two members .....$2.00 each
Three or more members in a local ass'n .....$1.00 each

There will be not less than four issues of COSMOLOGY a year, and if possible, more, each will be at least thirty pages of science, scientification, and letters. Each member may insert one ad a year. Each issue will contain an up-to-date mailing list that the members may correspond with each other.

Ray Palmer, who made the Science Correspondence Club something worth while belonging to, is back, and what's more, he's president. And listen, Mr. Editor, is it true you're going to have some more stories by him, the *Time Ray of Jandra* was one of the best short scientification stories ever published.

The cover of the August issue was a masterpiece.

And one last prayer: If you're going to print this please do it within a month or two, if you don't we will be all set up and you will be deprived of the glory of a share in the triumphal come-back of the International Scientific Association and the Junior Scientific Association. If it hadn't been for this magazine there probably never would have been conceived such organizations; they are, however, so in line with the spirit of the age, that with good management they must succeed.

CLIFTON AMSBURY,
186 Hillcrest Rd.,
Berkeley, Calif.

(It has been the pleasant fortune of AMAZING STORIES to lead directly or indirectly to the formation of scientific societies and we gladly publish your letter and sincerely hope that it will procure new members for you. The backing of the Board of Education in San Francisco is quite a wonderful compliment. We will be delighted to do anything to forward your desires in the matter of your Association work. —EDITOR.)

A SUGGESTION TO OUR READERS TO OPEN CORRESPONDENCE ABOUT AN ORGANIZATION FOR SCIENCE CLUBS

Editor, AMAZING STORIES:

This is my first letter to "our" magazine.

As I am an idealist, I am interested in social Utopias, and I thought it would be a good idea to form a science club with a scientific organization. I mean having it organized like a government of a future country in some of your stories. I like to make ideal governments on paper, but sometimes my theory hits a snag.

I have already got many ideas of my own, but I would like to see what other people have thought up.

I would be glad to correspond with other readers.

Antonio Medina,
4506 Main Street,
Apt. 101,
Kansas City, Missouri.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of AMAZING STORIES, published Monthly at Dunellen, New Jersey, for October 1, 1932.
State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Lee Ellmaker, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMAZING STORIES and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are Publisher, Teck Publications, Inc., 222 West 39th Street, New York, N. Y.; Editor, T. O'Conor Sloane, 222 West 39th Street, New York, N. Y.; Managing Editor, none; Business Manager, Lee Ellmaker, 222 West 39th Street, New York, N. Y.

2. That the owner is: Teck Publications, Inc., 222 West 39th Street, New York, N. Y.; Lee Ellmaker, 222 West 39th Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

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LEE ELLMAKER,

Sworn to and subscribed before me this 29th day of September, 1932.

(SEAL) ABNER GERMANN,
Notary Public.

(My commission expires March 30, 1934.)

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29x4.75-20"	2.50	1.00	33x4	2.95	.98
29x5.00-19"	2.95	1.20	32x4½	3.20	1.25
30x5.00-20"	2.95	1.20	33x4½	3.20	1.35
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30x5.00-18"	3.20	1.30			
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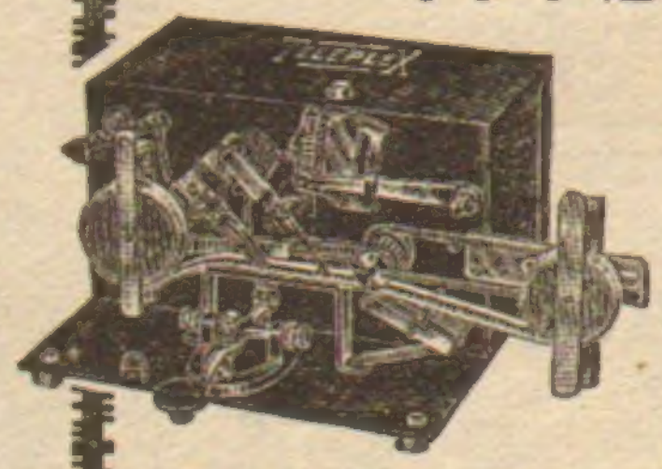

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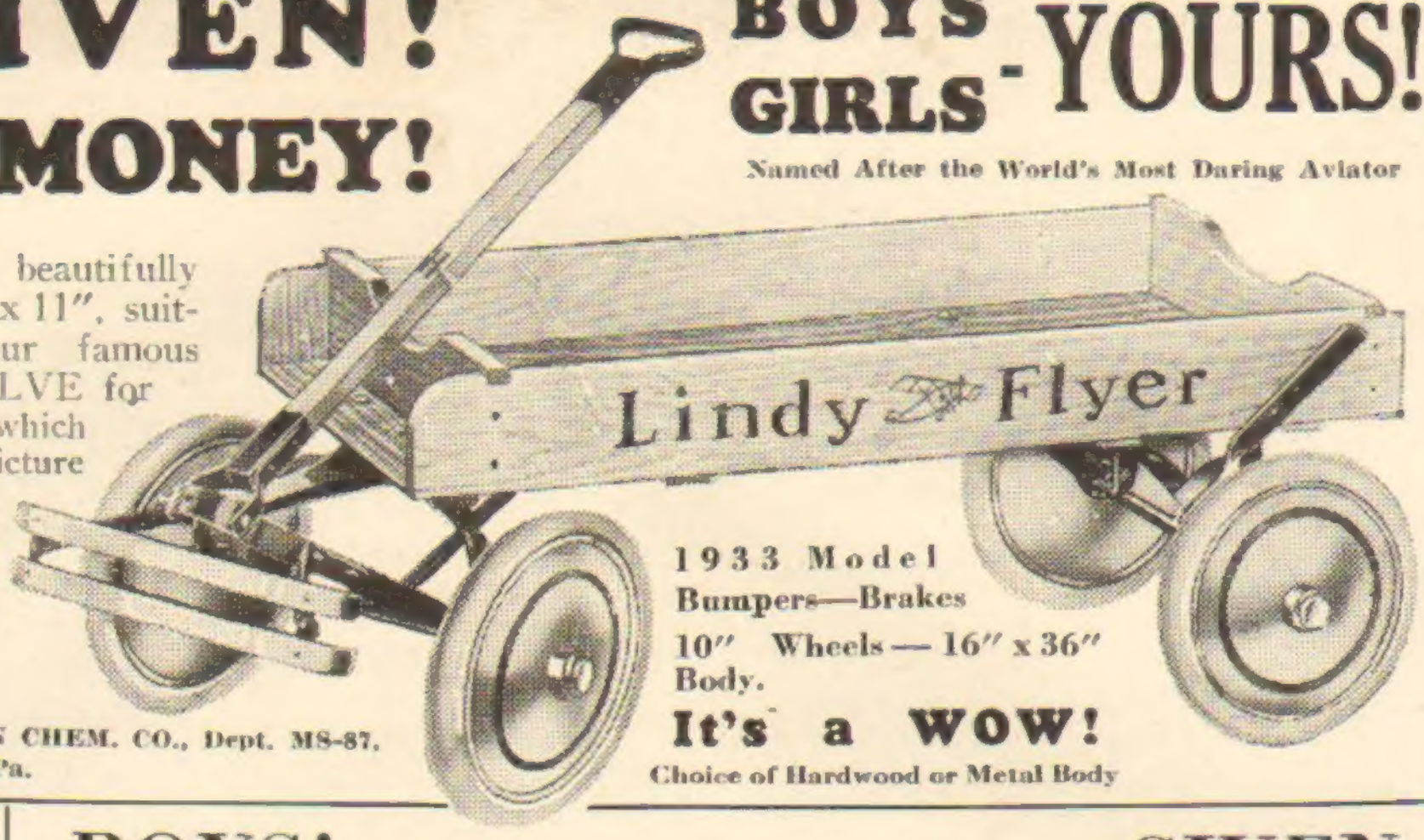
Named After the World's Most Daring Aviator



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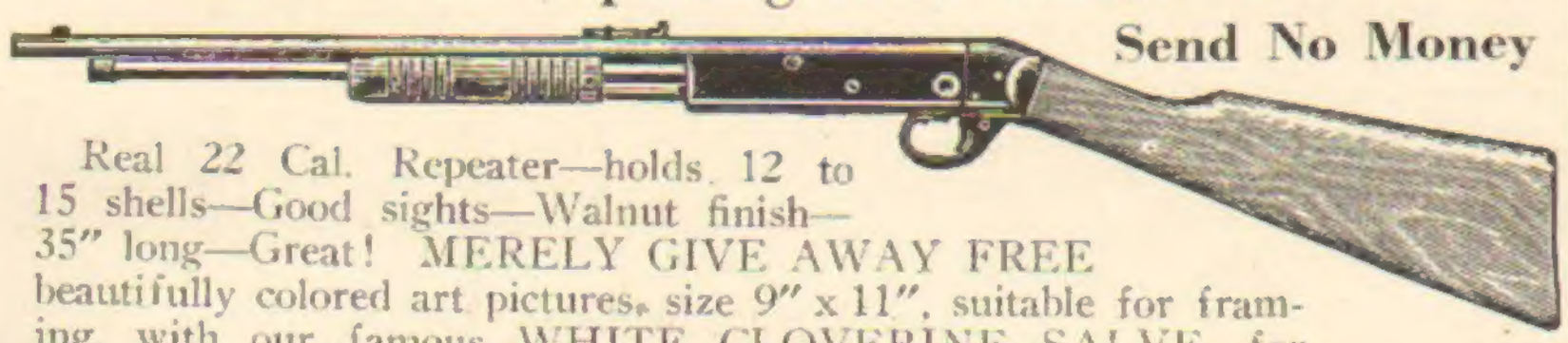

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BOYS! Bracelet Watch GIVEN

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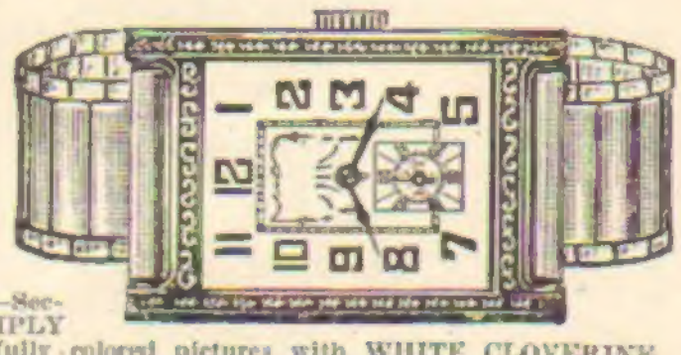

Stylish shape white metal curved case—10½ ligne—Adjustable metal bracelet—Six jewel—Lever movement—Radiant dial and hands—Second hand—Big value—SIMPLY GIVE AWAY FREE beautifully colored pictures with WHITE CLOVERINE SALVE for chaps, burns, cuts, sores, etc., which you sell at 25c a box (giving picture FREE) and remit as per new PREMIUM PLAN BOOK. Choice **other gifts** or CASH COMMISSION—CLOVERINE fast seller—BE FIRST! Offer L't'd. Best plans in 37 years.

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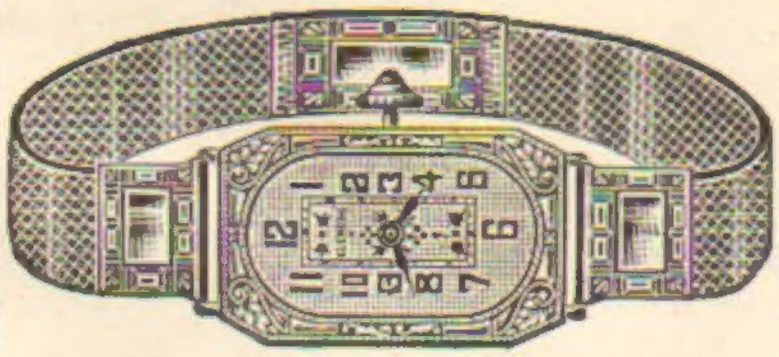

LADIES — GIRLS THIS WRIST WATCH YOURS! —GIVEN—SEND NO MONEY—SEND NAME AND ADDRESS.

Stylish shape white chromium plated case—Metal bracelet—Six jewel—Lever movement—Adorable—MERELY GIVE AWAY FREE beautifully colored art pictures with famous WHITE CLOVERINE SALVE which you sell to friends at 25c a box (giving picture FREE) and remit as per new PREMIUM PLAN BOOK—Other *choice gifts* or CASH COMMISSION—BE FIRST—Offer L't'd.

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COUPON CUT OUT AND MAIL TODAY!

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Gentlemen: Please send me twelve beautifully colored art pictures with twelve boxes famous WHITE CLOVERINE SALVE which I am to sell to friends at 25c a box (giving picture FREE) and remit to you within thirty days and select a **premium** or keep **cash commission**, as per new PREMIUM PLAN BOOK sent with order.

NAME.....

R. F. D., ST. or BOX No.....

TOWN.....STATE.....

PRINT your LAST NAME ONLY in space below

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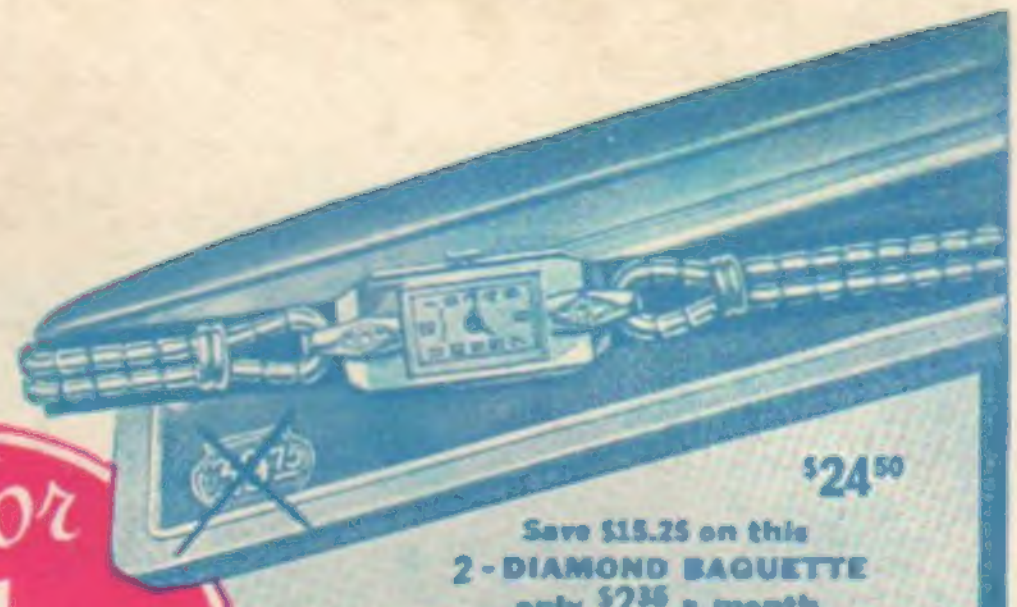

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Only $1.59 a month

GO-4 . . . Gentleman's massive initial ring of Solid White Gold. Genuine black onyx set with a brilliant genuine diamond and two initials in raised White Gold. Specify initials desired. *Sale Price Only* $16.95—$1.59 *a month.*

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GO-10 . . . Exquisitely hand engraved, pierced and milgrained 18-K Solid White Gold, prong ring. Fiery, genuine blue-white diamond in center and 2 genuine diamonds on each side. A most outstanding value! **Cannot be equalled anywhere at this price.** $27.50—*only* $2.65 *a month.*

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GO-5 . . . Exquisite, newest style wedding ring set with 9 fiery, genuine diamonds. Beautifully hand-engraved and daintily milgrained. 18-K Solid White Gold mounting. *Sale Price Only* $19.85—$1.88 *a month.*

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Friendship Ring

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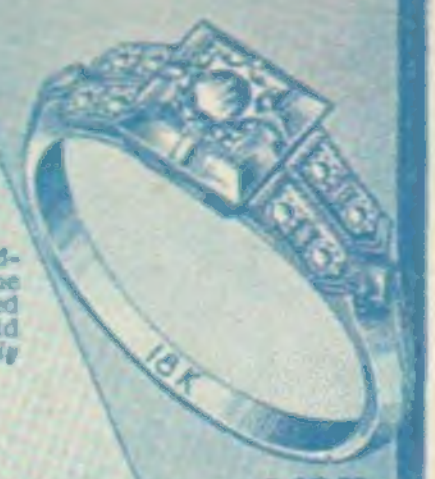

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Man — What a Watch!

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